

Nez Perce - Clearwater National Forests
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Travel Analysis Report

Nez Perce - Clearwater National Forests

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Background

The Nez Perce - Clearwater National Forests (NFs) expects to maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns. The national forest road system of the future must continue to provide needed access for recreation and resource management, as well as support watershed restoration and resource protection to sustain healthy ecosystems.

The Road Management Rule (Rule) was published in the *Federal Register* on January 12, 2001.¹ The Rule “removes the [prior rule’s] emphasis on transportation development and adds a requirement for science-based transportation analysis.” “The intended effect of this final rule is to help ensure that additions to the National Forest System network of roads are those deemed essential for resource management and use; that, construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and finally that unneeded roads are decommissioned and restoration of ecological processes are initiated” (Federal Register Vol. 66, No 9, pg. 3206).

Subpart A of the Rule pertains to Administration of the Forest Transportation System. In part, Subpart A requires each unit of the National Forest System (NFS) to: 1) identify the minimum road system (MRS) needed for safe and efficient travel and for protection, management, and use of NFS lands (36 *Code of Federal Regulations* (CFR) 212.5(b) (1)); and 2) identify roads that are no longer needed to meet forest resource management objectives (36 CFR 212.5 (b) (2)). In determining the MRS, the responsible official must incorporate a science-based roads analysis at the appropriate scale. It is Forest Service policy (FSM 7710.3) that the travel analysis process defined at FSH 7709.55, Ch. 20 is to serve as the “science-based roads analysis” required by 36 CFR 212.5 (b)(1). Travel analysis is not a decision-making process. Rather, travel analysis informs decisions relating to administration of the forest transportation system and helps to identify proposals for change (FSM 7712).

Purpose

This travel analysis report documents the results of the Nez Perce - Clearwater National Forest’s unit-wide travel analysis. This broad-scale analysis encompasses all existing National Forest System (NFS) roads (NFSRs) on the Nez Perce - Clearwater NFs. The report provides an assessment of the road infrastructure and a set of findings and opportunities for change to the forest transportation system. This report will not change or modify any existing NEPA decisions, but should help to inform Forest managers as they identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.

Process

In general, the purpose of a Travel Analysis Process (TAP) is to provide the responsible official with appropriate information related to the existing road system. Travel analysis informs travel management decisions by examining key issues related to the portion of the forest transportation system under analysis, as well as management options and priorities. Travel analysis is not a decision-making process (FSH 7709.55 21).

¹ Administration of the Forest Development Transportation System: Prohibitions: Use of Motor Vehicles Off Forest Service Roads (*Federal Register* Vol. 66, No 9, pg. 3206)

The TAP has six steps that are outlined in Chapter 20 Travel Analysis, FSH 7709.55 – Travel Planning Handbook. The analysis is tailored to local situations and landscape conditions by Forest staff and considers public/partner agency input. Instructions from the Forest Supervisor for the analysis are contained in an initiation letter as part of the analysis record. The six-step process includes:

- Step 1. Setting up the Analysis
- Step 2. Describing the Situation
- Step 3. Identifying Issues
- Step 4. Assessing Benefits, Problems and Risks
- Step 5. Describing Opportunities and Setting Priorities
- Step 6. Reporting.

The analysis is a science-based process, considering social and environmental risks and benefits of the road system, a financial review, and contribution of the road system to the land management objectives and desired condition. The amount of time and effort spent on each step differs by the complexity of the issues, specific situations and available information particular to the analysis area.

Products

The results of the TAP are documented in a Travel Analysis Report (TAR). The TAP and TAR are important first steps towards the development of the MRS. The TAR documents the information and analysis used to identify opportunities and set priorities for future National Forest transportation systems. This report will include:

1. Information about the analysis as it related to the criteria found in 36 CFR 212.5(b)(1), and
2. A map displaying the roads that can be used to inform the proposed action for identifying the MRS and unneeded roads.

The report will help inform Forest managers as they identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. It may also provide useful information to help develop and prioritize future proposed actions that include travel management and/or transportation system changes. Actual project proposals are examined in the NEPA process that provides a project specific, detailed basis for making decisions. Site-specific environmental analysis should build on and incorporate relevant information developed during travel analysis.

Step 1—Setting Up the Analysis

Scale of the Analysis

The TAP analysis area includes the entire Nez Perce - Clearwater NFs. Regional Office and Forest resource specialist staff developed a framework in which information on all existing NFS roads on the Nez Perce - Clearwater NFs could be evaluated, documented and displayed in a TAR.

Scope of the Analysis

The scope of this travel analysis is to evaluate the existing NFSRs in order to provide information that can be used to inform proposed actions for identification of road system (36 CFR 212.5(b)(1)) and identification of unneeded roads (36 CFR 212.5 (b)(2)).

Available Data

The Nez Perce - Clearwater NFs utilize two primary tools to maintain data about the existing NFSRs. One tool is a geographic information system (GIS), which is a geospatial data system. In addition to providing spatial data on roads, this system stores spatial data on other resources across the forest, including recreation, wildlife, water resources, vegetation, and fire history. The second tool is the infrastructure database (Natural Resource Manager) that contains geo-referenced road-specific infrastructure data (i.e., engineering data). This analysis utilized existing information in these two data systems to evaluate road segments. Road mileages in the GIS system represent the scaled arch distance in two dimensions. The road mileages in the infrastructure database represent three dimensional distances from road logs generally measured with distance measuring instruments. This results in a systematic difference in the GIS miles and database miles.

Step 2—Describing the Situation

The transportation system for the Nez Perce - Clearwater NFs is defined as the system of NFSRs, NFS trails, and airfields on NFS lands (36 CFR 212.1). This section covers the existing condition of the NFSRs.

NFSRs are roads, under the jurisdiction of the Forest Service, wholly or partly within or adjacent to and serving the NFS that the Forest Service determines is necessary for the protection, administration, and utilization of the NFS and the use and development of its resources. Roads managed by public road agencies such as States, counties and municipalities that help provide for access to NFS lands are also part of the overall transportation system, though are not under the jurisdiction or direction of the National Forest.

NFSRs are designated by their intended use. The intended use helps define the design and maintenance standards for each road. Roads are generally constructed and maintained wide enough (>12 feet) for typical cars and trucks. Because many of the roads were initially designed and constructed for use in achieving vegetation management objectives, design-basis vehicles were lowboys or logging trucks. Roads are built to grades usually less than 12 percent to allow for most highway vehicles. The Forest Service uses five maintenance levels (MLs) to define the general use and type of maintenance. A map of the NFSRs by ML is provided in Appendix A. In general, the five MLs can be described as:

- ML 1. These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Roads managed at this maintenance level are described as being in basic custodial care.
- ML 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are generally not provided. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or more of a combination of administrative, permitted, dispersed recreation, or other specialized uses. Roads managed at this ML are designed and/or maintained for high clearance vehicles.
- ML 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this ML are typically used at low speeds and have single lanes and turnouts.

- ML 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.
- ML 5. Assigned to roads that provide a high level of user comfort and convenience. The roads are normally double lane and paved. Some roads may be aggregate surfaced and dust abated.

ML 3-5 roads are collectively maintained assuming travel and use by prudent drivers in standard passenger vehicles. These roads fall under the requirements of the National Highway Safety Act and the Manual of Uniform Traffic Control Devices. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations.

The Nez Perce - Clearwater NFs have 7,777 miles of NFS roads.² 25 percent of the roads are managed for passenger vehicles. An additional 26 percent are managed for high clearance vehicles, but still open for the public. The remaining 49 percent of the NFSRs are in custodial care (ML 1- closed to public motorized use). Most of the road miles lie within Idaho County (5,199 miles), Clearwater County (1,907 miles), Latah County (596 miles), Benewah County (61 miles), and the remainder in Lewis, Nez Perce, Shoshone, and Missoula Counties (14 miles).

The number and miles of NFSRs on the Nez Perce - Clearwater NFs have steadily been decreasing since 1995. About 1830 miles of NFSRs have been decommissioned during this time. (See Table 1 for a summary of the miles of system roads decommissioned over the last 20 years.) However, there have also been additions to the NFS road system. These additions included new local roads constructed for vegetation management, acquisition of roads related to cooperative road right-of-way agreements, NRM database cleanup, and a few from the acquisition of previous timber company lands.

The Nez Perce - Clearwater NFs implements best management practices (BMPs) along with numerous other project design features and resource protection measures when implementing vegetation management projects. Use of BMPs ensures compliance with the Clean Water Act and is a proven means of protecting soil and water resources during project implementation. The Forest conducts qualitative and formal BMP reviews on a number of projects in order to evaluate operational compliance and effectiveness. An audit of BMP implementation occurs every two years across the entire state in cooperation with Idaho Department of Environmental Quality and Idaho Department of Lands (IDL). Summaries of these audits are available from IDL and show a high level of effective implementation by federal agencies, such as the Forest Service.

Table 1. Decommissioned roads from 1995 to 2014 on the Nez Perce - Clearwater NFs.

Decommissioned Roads										
Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Miles	18.2	18.5	60.4	154.5	127.8	67.3	92.0	42.7	41.9	156.9
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Miles	29.6	55.0	52.1	111.4	127.0	138.3	90.1	154.9	194.4	97.4

Step 3—Identifying the Issues

The following is a synopsis of the road-related issues identified in the Clearwater National Forest Travel Management Plan (Record of Decision 2011), the Draft Environmental Impact Statement for the Nez Perce National Forest Designated Routes and Areas for Motorized Vehicle Use and in meetings and scoping comments on the Nez Perce-Clearwater National Forests' Forest Plan Revision. In addition to the

² NRM Infra user view II_ROAD_CORE October 3, 2014

issues identified in these processes, the Forest Service has obligations to maintain access to private property and other agency lands, as well as to maintain roads that provide access under long-term special use permit.

Amount of Motorized and Non-motorized Access

- More opportunities for motorized travel are needed to meet the demand including loop routes and high-elevation access.
- The Forests should provide more non-motorized opportunities and fewer motorized routes. Non-motorized travel opportunities should be prioritized because motorized recreation displaces some individuals who are seeking a non-motorized recreation experience.
- Eliminating cross country travel displaces motorized users and concentrates motorized use in areas of the forest.
- Few places are available for non-motorized recreation opportunities close to population centers for day use.
- Too many roads have been removed for the public to actively harvest game animals or obtain forest products.
- Road mileage should be reduced because the Forest Service cannot afford to maintain the existing road system.
- Reduce the maintenance level on some roads to contain costs.

Motorized and Non-motorized Access within Inventoried Roadless Areas

- Inventoried Roadless Areas should not have any motorized use due to potential inclusion as designated wilderness.
- Inventoried Roadless Areas provide an important role in the range of recreation opportunities outside the Wilderness and motorized use should be allowed in these areas.

Impacts of Motorized and Non-motorized Access

- New road construction should not be permitted because of existing sediment problems.
- Motorized access can have a negative impact on natural resources such as wildlife habitat and behavior, fisheries habitat, soils and water quality.
- Road densities in some areas negatively affect aquatic and wildlife habitat, particularly elk security.
- There is no evidence that motorized access has a negative effect on wildlife behavior such as elk security.
- Motorized access could result in the establishment or further spread of invasive plants and aquatic nuisance species.
- Motorized access could result in impacts to historic properties. There may be sacred areas negatively impacted by motorized access.
- The amount and location of motorized access may have both positive and negative effects on traditional gathering practices.
- Do not decommission more roads because they are needed to actively manage the land for forest health.
- Forest roads are a critical component of cooperative Forest Service, state and county wildland fire protection plans for the wildland urban interface (WUI).

Some of these issues are related to designation of roads for motor vehicle use (i.e., accepting or prohibiting public motorized traffic on a particular road). The Clearwater National Forest Travel Management Plan designated routes for particular motorized uses. Decisions made under this travel management plan were not re-evaluated in this analysis. A decision has not been made on the Nez Perce

National Forest Designated Routes and Areas for Motorized Vehicle Use (DRAMVU) project. Any relevant information from the DRAMVU process was incorporated into this analysis.

Additionally, management of unauthorized roads also was not evaluated in this analysis, as unauthorized routes are not considered part of the managed transportation system. However, the management or reclamation of unauthorized roads will be addressed through project-level analysis. Reclamation of unauthorized roads may represent significantly more opportunity to decommission unneeded roads than the opportunities associated with NFS roads.

Public and Partner Collaboration Process

The public and partner agencies were invited to review the preliminary Opportunities for Change Map and provide feedback. The review and comment period for the Opportunities for Change Map began with the August 5, 2015, press release announcing the availability of the map on the Forest Service ArcGIS Online Mapping website, available through a link on the Nez Perce-Clearwater's website. Comments were requested by August 31, 2015.

As described on the ArcGIS Online website, "The TAP includes the opportunity for the public to participate by commenting on the Forest's preliminary identification of its existing NFSRs and opportunities for change, which are displayed on the map. The most helpful comments are those that 1) select specific roads and 2) provide specific reasons/purposes why these roads should or should not be needed or retained for future use."

Nine comments from six different commenters were received through the ArcGIS Online website. Appendix B provides a summary of their input. All comments received during the comment period were read and considered.

In general, the road issues raised were consistent with those road-related issues identified in past decisions or brought forward in recent meetings regarding the Nez Perce-Clearwater Forest Plan revision. At the broad, forest-wide scale of this analysis, the 13 risk and benefit questions developed by the interdisciplinary team adequately considers the range of issues.

Most of the comments were regarding specific roads or areas. Some commenters raised concerns related to the TAP methodology. At this broad, forest-wide scale, the methodology and opportunities identified in the report are general in nature. Forest Service Manual 7712 gives a great deal of discretion to the line officer to determine the scope and detail of the analysis needed. This approach utilizes a science based roads analysis to evaluate the relative environmental risk and beneficial access needs associated with every NFS road. Results of this analysis are objective. The road maintenance calculator developed by the Regional Office provides consistent estimates of road costs.

This analysis does not address issues that are only informed with fine-scale data and analysis. Identifying future opportunities with finer scale information will be an ongoing effort by the resource specialists, road managers, and line officers. Further analysis and refinement of the opportunities identified in the report will occur at a finer scale during project-level NEPA. Road specific comments provided during this analysis may inform the project level NEPA.

Step 4—Assessing Benefits and Risks of the Existing Road System

Development of Risk and Benefit Assessment Questions

Regional and forest subject-matter experts were asked to develop questions that are effective at making distinctions between risk and benefits of a forest road system, using available data and tools. They reviewed previous analysis questions for roads to see if they could be used as part of this analysis. The previous analysis questions reviewed by the Regional subject-matter experts were from the following sources:

- Road Analysis Process (FS-643)
- Watershed Condition Framework (FS-977)
- Previously completed Travel Analysis Processes by other forests
- Travel Analysis Questions developed by Forest Service Region 9.

The subject-matter experts were provided a set of selection criteria that were used as a guideline as they developed risk and benefit assessment questions. See Appendix H for an explanation of developing the Regional Analysis Questions. The selection criteria below were developed by the Regional technical team:

Overarching Selection Criteria:

1. Questions reflect requirements of law, regulation, Forest Service policies or Forest land management plans.
2. Questions use best available data sources.
3. Questions lend themselves to answers that are objective, quantifiable and repeatable (different investigators applying the same question to the same data would come up with the same answers).
4. Questions can be answered based on accepted science.
5. Questions are matched to an appropriate scale of analysis.
6. Questions are effective at making distinctions between necessary and unnecessary roads, making use of previous analysis work.
7. Questions are answered with existing geographic information system (GIS) layers to the maximum extent possible.

Risk Selection Criteria: (Addressed by specific questions)

1. Does the road contribute to an adverse regulatory finding (e.g., Clean Water Act impairment)?
2. Does the road violate Forest Service Manual or Handbook requirements?
3. Does the road violate a Forest Plan standard or guideline?

Benefit Selection Criteria: (Addressed by specific questions)

1. Is the road necessary to meet Forest Plan direction?
2. Is the road necessary to maintain a capital investment?
3. Is the road necessary to access a long-term special use?
4. Is the road necessary to access a reserved or outstanding interest in land or resources?

The risk and benefit questions were used to determine numeric, consolidated assessment values of specific road segments across the forest. The initial risk and benefit assessment values are used in conjunction with the cost analysis, input from the public and partners, and previous commitments (such as

road cost-share agreements or long-term special use permits) to identify opportunities to change the Forest or Grasslands road system. Some of the road-related issues identified by the public and other agencies can be addressed by risk and benefit questions relative to specific road segments, while others would be more appropriately addressed during forest plan revision or during implementation of site-specific projects.

The following analysis questions are designed to quantify the level of environmental risk and benefit for specific road segments. The interdisciplinary team eliminated questions that were duplicative and combined questions that had the same overall intent.

Benefit Analysis Questions

Access Category Questions

There are three questions related to required access benefits for non-Forest Service lands, Forest Service administrative facilities, and permit holders.

Benefit Question 1: Does the road provide access to private or other non-NFS lands?

The Alaska National Interest Lands Conservation Act [ANILCA] requires the Forest Service to allow reasonable legal access to private lands completely surrounded by NFS lands. Each inholding must have reasonable access by at least one route. A private road permit or easement may be granted to the private land owner, who then has the primary jurisdiction of the road and is responsible for its maintenance. In cases where an easement is granted to a county or other public road agency, the road would no longer be an NFSR or subject to this assessment.

Tools/Data Resources

- GIS roads layer
- Lands layer (NFS and non-NFS lands within NFS boundary)

Available Values/Definitions

- 5 = Yes – the road provides access to private or non-NFS lands
- 0 = No – the road does not provide access to private or non-NFS lands

Benefit Question 2: Does the road access Forest Service administrative facilities?

Administrative sites represent an investment, either by the Forest Service or partners, such as other governmental entities. Eliminating access to these facilities may reduce or eliminate the value of the investment. It is important to know if roads or trails provide the only access to such investments. Consider sites such as administrative sites, fire lookouts, cabins, stream gages, communication sites, etc.

Tools/Data Resources

- GIS roads layer
- Administrative facilities site map and spatial data
- INFRA database

Available Values/Definitions

- 5 = Yes – the road accesses an administration site or non-recreation improvements.
- 0 = No – developed administration facilities or non-recreation improvements are accessed by the road.

Benefit Question 3: Is the road the primary access to areas or sites under a long-term special use permit authorization?

Access via system roads may be necessary to allow the customer and/or special use authorization holder to access areas authorized for long-term use including, but not limited to, ski hills, utility corridors, range allotments, mineral leases, and areas requiring recreation-related permits that do not include a developed site.

Tools/Data Resources

- GIS land status, Special Use Permit (SUP) locations and boundaries
- Special Uses Data System (SUDS) database
- GIS roads layer
- Local knowledge of recreation and lands SUP administrator
- INFRA database (cost share easements)
- Locatable minerals layer
- Quarries layer
- Range management units layer

Available Values/Definitions

If available, overlay locations of all designated areas currently under a special use authorization on the roads/trails layer using GIS. Examine the proposed routes to the designated sites and render a value rating according to the following scale:

- 5 = Road the only access to designated area under a special use authorization
- 0 = Road access not necessary to designated areas under special use authorization

Vegetation Management Questions

Benefit Question 4: Does the road provide access for vegetation management treatments on suitable lands or on non-suitable lands that are within the WUI?

The long-term need for continued access to lands for future vegetative treatments, including commercial or service contract treatments, must be recognized. Activities designed to reduce hazardous fuels, restore ecosystem function, and improve forest health occur on both suitable and non-suitable lands and often require multiple entries. Sufficient access to successfully implement these activities should be considered, as well as NFMA requirements following treatments. Such access could be reasonably managed as closed for public entry between management entries. (Some silvicultural entries may be less than 20 years apart.)

Tools/Data Resources

- GIS land status
- INFRA roads data
- Forest Plan Suitable Base Lands
- WUI delineations.

Available Values/Definitions

Examine the proposed routes against the suitable lands and WUIs and render a value rating according to the following scale:

- 5 = Veg management value high (road provides access to suitable lands or non-suitable WUI lands)
- 0 = Veg management value low (no suitable lands or non-suitable WUI lands accessed).

Benefit Question 5: Does the road allow continuing access to conduct on-going research related to silviculture, forest health and climate change?

There are a variety of ecological studies that exist on NFS land. Some have been in place for over 50 years and rely on periodic re-measurements. Access to these studies is critical in order to maintain their integrity. In some cases the road is actually a part of the study so eliminating it would have impacts as well. Future studies should be designed with travel management in mind or incorporate the possibility that long-term road access may not be realistic.

Tools/Data Resources

- GIS land status
- Forest Plan management areas (e.g., experimental forests or research natural areas [RNAs])
- GIS roads layer
- Local knowledge of silvicultural and field staff

Available Values/Definitions

- 5 = Yes – the road provides direct access to a long-term study area
- 0 = No – no known research plots are accessed.

Recreation Category Questions

There is one question specifically related to recreation access benefits. Questions related to other access benefits may also indirectly provide recreation benefits.

Benefit Question 6: Does the road access a recreation site, either a developed recreation site or inventoried user created site?

Certain recreation sites represent agency capital or labor investments. To maintain the value of these sites and for the public to receive value from these areas, access must be provided.

Tools/Data Resources

- GIS roads layer
- INFRA Database (Rec Core)
- Developed Recreation INFRA Database
- User-created Recreation Sites INFRA Database
- Land Management Plan Management Areas.

Available Values/Definitions

- 5 = Yes – road is necessary to access developed trailheads or recreation sites/areas
- 0 = No – no developed sites/areas are accessed by the road.

Wildfire Hazard Response Category Questions

There is one question related to access benefits for emergency response within the WUI.

Benefit Question 7: Does the road provide access to WUI?

Forest roads are often used for emergency evacuation routes or during fire suppression operations around WUI areas. Local communities are required to develop emergency fire response plans for WUI areas. The long-term need for continued access by all emergency response partners, including wildfire and structure fire response needs to be recognized. Responder and public safety, location, situation and access are considered. This question is intended to inform decisions with regard to existing roads in the context of emergency response, and be used in conjunction with professional knowledge, experience, and response needs relevant to the Nez Perce - Clearwater NFs.

Tools/Data Resources

- Fire management plans, pre-suppression attack plans (WUI layer)
- GIS roads layer

Available Values/Definitions

- 5 = Yes – road is specifically listed in a community fire plan or mapped WUI
- 0 = No – road is not used at all.

Risk Analysis Questions

Watershed and Aquatic Biota Category Questions

Forest transportation systems have the potential to impact water quality, aquatic habitat, and aquatic biota. Impacts can be highly variable and may include mass wasting, sediment delivery, loss of woody material, channel and riparian encroachment, and/or blockage of aquatic organism passage. The spatial and temporal magnitude of are strongly driven by the proximity of roads to stream networks and/or unstable soils. Therefore, the following four analysis questions are meant to focus on the location of roads in relation stream networks and other water bodies, unstable landforms or soils, and 303(d) waters.³ The degree of aquatic organism blockage is also addressed.

Risk Question 1: What is the road length within 150 feet of the stream⁴ network and/or other water bodies?

Roads in close proximity to water bodies can have a wide range of direct and indirect effects on riparian ecosystems, water quality, and aquatic habitat. Roads that parallel streams have the potential to effect floodplain function, riparian vegetation, stream temperature, and are a common source of sediment. Roads within 150 feet may have direct impacts on channel morphology which can lead to a variety of other impacts.

Tools/Data Resources

- GIS Road layer
- National Hydrography Dataset (NHD)
- Administrative boundary for land ownership.

Available Values/Definitions

- 5 = Road is among top 1/3 of greatest total distance within 150 feet of the stream² network or water bodies
- 0 = Road is among bottom 1/3 of total distance within 150 feet of the stream network or water bodies

High, moderate, and low values would be generated using Jenks Natural Breaks, as opposed to an arbitrary threshold number. It essentially minimizes variance within groups and maximizes variance among groups.

Risk Question 2: What is the total number of stream crossings?

Road-stream crossings have been shown to be major source of risk. Crossings are a common source of sediment, pose a potential for failure, and are potential barriers to aquatic organism passage. The number of intersections between the road and stream network were used to get a total number of stream crossings.

Tools/Data Resources

³ As defined by the 2012 303(d) list of sediment-impaired waters.

⁴ Included perennial streams only.

- GIS Road layer
- National Hydrography Dataset (NHD)
- Administrative boundary for land ownership.

Available Values/Definitions

- 5 = Road is among top 1/3 of greatest number of stream crossings
- 2 = The middle third
- 0 = Road is among bottom 1/3 of greatest number of stream crossings

High, moderate, and low values were generated using Jenks Natural Breaks, as opposed to an arbitrary threshold number. It essentially minimizes variance within groups and maximizes variance among groups.

Risk Question 3: Does the road cross unstable soils?

Roads crossing unstable soils are prone to mass failure, debris flows, and/or accelerated erosion.

Tools/Data Resources

- GIS road layer
- NFS lands inventory and land types designated as sensitive
- Administrative boundary for land ownership

Available Values/Definitions

- 5 = Top 1/3 of road distance across unstable soil types
- 0 = Bottom 1/3 of road distance across unstable soil types.

High, moderate, and low values were generated using Jenks Natural Breaks, as opposed to an arbitrary threshold number. It essentially minimizes variance within groups and maximizes variance among groups.

Risk Question 4: Does the road create barriers to aquatic organism passage (i.e., habitat fragmentation)?

Road-related structures, mostly in the form of culverts, can create barriers to fish passage. These structures may also inhibit the movement of amphibians.

Tools/Data Resources

- INFRA road data
- Administrative boundary and land ownership
- NHD
- Culvert inventory data from NRIS Aquatic Surveys, R1 Fish Barrier Database, Nez Perce - Clearwater NFs Access Database.

Available Values/Definitions

- 5 = Aquatic habitat fragmentation due to blockages – More than two inventoried unwanted barriers including both total and partial barriers
- 0 = Fragmentation of habitat is not a serious concern.

Terrestrial Ecology Category Questions

There are two questions related to access risks related to wildlife: Risk Question 5 and 6.

There are several ways that transportation routes and their uses affect wildlife. They can include direct, indirect and cumulative impacts to habitat, individuals and populations including:

- Direct road mortality due to vehicle collision

- Indirect mortality through facilitated access for hunting and trapping.
- Habitat loss (directly or indirectly due to factors such as snag loss adjacent to a road, displacement due to human activity on the road, etc.).
- Reduced connectivity (because a road bisects grizzly bear security core habitat, elk security area, or large old growth block, for example).

Impacts of forest roads on wildlife are assessed using two basic frameworks: 1) analysis of road or open road density and 2) analysis of key habitats as affected by roads. The impact of highways on connectivity in linkage areas is a separate issue not addressed in this analysis.

Risk Question 5: Does the road bisect larger blocks of habitat that can provide elk security?

When conducting travel management assessment, Forest Service staff is encouraged to first consider the wildlife species most vulnerable or sensitive to the effects of motorized roads or trails, particularly the most limiting species. The effects of roads and wildlife have been most thoroughly studied for species such as elk and grizzly bears, so Forest Plan direction is often related to these two species. However, road management that provides elk security benefits many other wildlife species. Elk security areas are defined as areas more than 0.5 mile from an open road with a block of hiding cover at least 250 acres in size (Hillis et al. 2001).

Tools/Data Resources

- Roads GIS layer
- Elk Management Units

Available Values/Definitions

- 5 = Yes – route accesses elk security habitat.
- 0 = No – road does not access elk security habitat.

In determining the scale of the analysis area and wildlife species evaluated, consider use of 6th code hydrologic unit code (HUC, Watershed Condition Framework scale) and/or a specific analysis area defined by threatened and endangered species (TES) conservation strategies, Forest Plan direction, or the analysis area for wildlife species most vulnerable or sensitive to the effects of motorized roads and trails.

Risk Question 6: Does road bisect important winter range?

Conservation management for some wildlife species relates to effectiveness of winter range and many Forest Plans have direction or standards to mitigate for adverse impacts. Important elk winter range have been identified and mapped on the Nez Perce - Clearwater NFs.

Tools/Data Resources

- Roads GIS layer
- Elk Winter Range

Available Values/Definitions

- 5 = Yes – Road bisects an elk winter range.
- 0 = No – Road does not bisect winter range.

Summary of Risk and Benefit Questions

Each NFS road received a “raw” score for each of the analysis questions above. Risk and benefit ratings were plotted on maps by analysis question and review by the interdisciplinary team for reasonableness. Refer to Appendix C for risk and benefit ratings for each question.

Scores for risk and benefit were aggregated and the Jenks natural breaks classification method was used to differential the values into low, medium, and high classes. See Appendix D for the summary risk and benefit maps.

Step 5—Describing Opportunities and Setting Priorities

The science-based risk and benefit analysis must be integrated with three other components as the interdisciplinary team considers logical opportunities to change the existing road system. The next three components are

- a financial analysis,
- public/partner involvement, and
- management area direction.

This integration process is intended to help Forest staff make informed recommendations for their forest transportation system.

Financial Analysis

The Nez Perce-Clearwater NFs receives annual roads funding (Construction and Maintenance of Roads, CMRD) for the operation and maintenance (O&M) of NFSRs. For fiscal years 2013, 2014, and 2015 the road O&M budget averaged \$1,228,000. Funding for the 3 years prior averaged \$1,377,000. The prior 4 year average was 1,679,000. This is a reduction of approximately 11 percent in O&M funding for the last 3 years, and about 27 percent over the last 10 years. Approximately 60 percent of this amount is reserved for timber sale engineering support and planning, while the remaining 40 percent is available for all road inventory, monitoring, analysis, contract administration, construction, operations, and maintenance.

The Nez Perce-Clearwater NFs may also receive roads construction and maintenance funding for capital investment projects (e.g., campground road improvement, bridge rehabilitation/replacement, aquatic organism passage projects), or for other national priority initiatives (e.g., flood response, aquatic organism passage, road decommissioning). There are limited opportunities to make capital improvements to the road system through the Regional Capital Investment Program (CIP) or through the Federal Lands Transportation Program. Each of these programs is highly competitive for funding. Integrated restoration projects and commercial timber sales represent some of the better opportunities to implement changes to the road system. The total CMRD roads appropriation for the last six years is provided in Table 2.

Table 2. Summary of CMRD Roads Appropriations for Fiscal Years 2010–2015.

CMRD	Roads	Appropriation	Fund Type
Year	O&M (\$)	CIP (\$)	CMRD Road Appropriations Total (\$)
2010	1,669,000	535,000	2,204,000
2011	1,189,000	794,000	1,983,000
2012	1,272,000	10,000	1,282,000
2013	1,236,000	11,000	1,246,000
2014	1,112,000	30,000	1,143,000
2015	1,335,000	28,000	1,364,000

Timber sales and integrated resource projects conducted under stewardship authority also directly provide funding for road maintenance and reconstruction on NFSRs. For example, stewardship retained receipts have been used for implementing road best management practices and providing aquatic organism passage. The majority of work on roads with ML 1 and 2 (i.e., receiving basic custodial care or maintenance for high clearance vehicles) are accomplished through these projects. Collections through timber sales related to road maintenance, aggregate surface replacement, and Knutson-Vandenberg (KV)

funds also provide funding for road-related activities. Table 3 provides a summary of timber/stewardship road-related funding.

Table 3. Summary of Timber/Stewardship Sale Road Maintenance, Reconstruction, and Surface Rock Collections for Fiscal Years 2010–2015.

Timber/Stewardship Sales Fund Type	Year					
	2010	2011	2012	2013	2014	2015
Road Maintenance (\$)	1,265,000	540,000	530,000	478,000	557,000	407,940
Road Reconstruction (\$)	33,500	77,600	76,500	58,900	58,900	39,900
Surface Rock Replacement (\$)	910,000	910,000	1,779,000	1,861,000	2,093,000	2,277,000
Timber/Stewardship Sales Total (\$)	2,210,000	1,530,000	2,388,000	2,400,000	2,710,000	2,727,000

Other specialized funds may be available for road-related project work, such as:

- Vegetation and watershed funds helped to do NEPA for aquatic organism passage projects, Legacy Roads and Trails funding for implementing road best management practices, providing aquatic organism passage, and replacing bridges, as well as restoration funds and aquatic habitat restoration funds.
- American Recovery and Reinvestment Act (ARRA) funding
- Stewardship Retained Receipts Projects
- Federal Highway Administration (FHWA) funding and Emergency Relief Federally Owned (ERFO)
- Rural Area County (RAC) funding
- Partnership funds with Bonneville Power Association, Nez Perce Tribe, Soil and Water Conservation Districts.
- Burn Area Emergency Rehabilitation (BAER)

Table 4. Summary of Other Special Projects Roads-Related Funding for Fiscal Years 2010–2015.

Other Special Project Road Funding Types	Year					
	2010	2011	2012	2013	2014	2015
Other FS Appropriations (\$)	600,000	421,000	72,000	454,000	553,000	247,000
ARRA (\$)	13,576,000	0	0	0	0	0
Stewardship Retained Receipts (\$)	49,000	77,000	7,600	70,000	563,000	105,000
FHWA&ERFO (\$)	86,000	49,000	841,000	0	189,000	0
Other (\$) (RAC)	95,000	140,000	68,000	500	205,000	\$16,000
CFLRA (\$)	324,000	258,000	644,000	33,000	661,000	493,000
Partnerships (\$)	1,065,000	571,000	939,000	1,181,000	1,479,000	856,000
Schedule A Agreements with County and Highway Districts+/- \$20K	295,000	295,000	295,000	295,000	295,000	295,000
BAER (\$)	0	0	75,000	197,000	59,000	80,000
Other Roads Funding Total (\$)	16,090,000	1,811,000	2,941,600	2,230,500	4,004,000	2,092,000

The Nez Perce-Clearwater NFs have strong partnerships with the Bonneville Power Administration, the Nez Perce Tribe, and various Soil Water Conservation Districts. These groups provide the bulk of our bridge and aquatic organism passage projects. They also support road decommissioning in critical watersheds. Table 5 provides a summary of funding to the roads program from these other funding sources over the last six years.

Table 5. Summary of Other Roads Decommissioning-Related Funding for Fiscal Years 2010–2015.

Other Road Decommissioning Fund Types	Year					
	2010	2011	2012	2013	2014	2015
Other FS Appropriations (\$)	25,000	219,000	460,000	333,000	364,000	245,000
ARRA (\$)	610,000	0	0	0	0	0
Stewardship Retained Receipts (\$)	0	80,000	158,000	185,000	180,000	295,000
Other (\$) (RAC)	70,000	60,000	61,000	25,000	0	0

Other Road Decommissioning	Year					
CFLRA (\$)	0	86,000	60,000	167,000	22,000	110,000
Partnerships (\$)	165,000	817,000	700,000	215,000	290,000	144,000
Other Road Decom Funding Total (\$)	870,000	1,262,000	1,439,00	925,000	856,000	794,000

Table 6. Total Available Road-Related Funding For Fiscal Years 2010–2015.

Fund Type	Year					
	2010	2011	2012	2013	2014	2015
CMRD Roads Appropriation (\$)	2,204,000	1,982,000	1,283,000	1,246,000	1,143,000	1,364,000
Timber/Stewardship Sales Total (\$)	2,210,000	1,530,000	2,388,000	2,400,000	2,710,000	2,727,000
Other Special Projects Roads Funding Total (\$)	16,090,000	1,811,000	2,941,600	2,230,500	4,004,000	2,092,000
Total for Road Decommissioning (\$)	870,000	1,262,000	1,439,00	925,000	856,000	794,000
Total Road-Related Funding (\$)	21,374,000	6,585,000	6,612,600	6,801,500	8,713,000	6,977,000

Much of the other roads funding (noted in Tables 4 and 5) has gone to high-expense projects, such as road resurfacing, bridge replacement, and aquatic organism passage. These projects are driven by priority watersheds, critical fishery watersheds, and concern about fishery recovery in certain other drainages.

Of all the funding types shown in the tables, CMRD appropriations and road-related maintenance and collections from timber/stewardship sales are the primary sources for annual road maintenance. Over the past 3 years, approximately \$1,545,000 of approximately \$3,863,000 in annual average road-related funds are annual maintenance (e.g., surface grading, roadside brushing, drainage structure cleaning and repair, and sign maintenance). The remaining funds go toward transportation planning, road management, road reconstruction, special projects, and capital improvement projects (though these also accomplish maintenance simultaneously).

In order to compare the need for road maintenance funds with funds actually obtained over the last 3 years, the Nez Perce-Clearwater NFs have used the Regional Average Road Maintenance Costs to estimate the annual cost of maintaining their road network. These costs were derived by identifying road maintenance work items and frequencies appropriate for each maintenance level. These costs are intended to reflect the actual cost of maintaining a road to its designated standard and may not reflect common practices carried out within budget constraints. The estimated funding needed to maintain road to standard is approximately \$2,936,000 annually. The Nez Perce – Clearwater NFs currently receives approximately 51 percent of the needed funds. Because the Nez Perce-Clearwater NFs road maintenance has not been fully funded over the last 5 years, it has prioritized road work. Currently, road maintenance funds are focused on roads open to public travel that access administrative sites and high use recreation sites. The primary maintenance items are regulatory and warning signage, surface blading, and roadside brushing. Maintenance of closure devices is also a priority and occurs consistently across the forest. Table 7 provides a summary of the number of NFSRs that received some type of maintenance (i.e., surface blading, road side brushing, down tree removal, and sign maintenance); percentage of the passenger car miles that received maintenance; and the percentage of non-passenger car miles that received maintenance, over the previous 5 years.

Table 7. Miles of NFSR Receiving Maintenance for Fiscal Years 2010-2015.

Year	NFSR Receiving Maintenance (miles)	Passenger Car System Receiving Maintenance (percent)	Non-Passenger Car System Receiving Maintenance (percent)
2014	2329	2050	279
2013	1667	1389	278
2012	2203	1632	571
2011	1948	1355	593
2010	6541	5100	1441

There has been a great deal of discussion on how to reduce the funding burden created by the existing road system. Some people have proposed decommissioning of roads to reduce the funding burden of needing to maintain roads. Roads that are not maintained may have an increased risk for surface erosion, gullying and landslides. Landslides and erosion off unmaintained roads can contribute to failure of other infrastructure such as main access roads and other facilities, adding to the economic burden. In the 1995 through 1997 flood years, many of the main access roads on the Forests were damaged by landslides, many of which originated on unmaintained and abandoned roads (McClelland et.al., 1997). On the other hand, there may be little to no financial savings of decommissioning roads with low maintenance needs and few risks (stream crossings and unstable ground).

Reducing road maintenance levels has been widely considered as the primary method to reduce costs. However, The Nez Perce-Clearwater NFs already have a high proportion of roads in the lower maintenance categories, and putting additional roads in a lower maintenance class can actually reduce the road maintenance funding allocated to the Nez Perce-Clearwater NFs, because roads in the ML 1 or 2 categories no longer qualify for some funding sources. For example, high clearance or closed roads are not eligible for funds from the Federal Lands Transportation Program. The Nez Perce-Clearwater NFs have about 25 percent of its road system designated for passenger car use (ML 3 or greater) and maintains less than half of those annually.

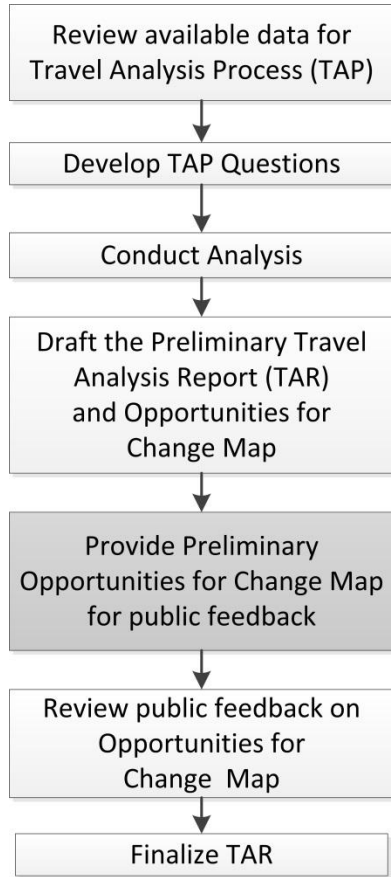
Converting roads to other uses, such as trails, has been considered as a method to maintain some Nez Perce-Clearwater NFs access without the economic burden of road maintenance. Trail managers are concerned that this treatment simply shifts the cost from one program to another. Others feel it shifts the cost burden to the users of “roads in storage” that are primarily receiving trail use. In either case, both roads and trails programs are underfunded to maintain the respective systems to standard.

Transferring road jurisdiction to another agency has also been suggested as a method to reduce the cost burden. Forest Service Manual 7732.23 actually directs the agency to work with public road agencies to transfer jurisdiction when the road use and traffic mix is no longer predominantly forest-generated. Counties have a history of cooperating with the Nez Perce-Clearwater NFs and accepting the jurisdiction of numerous roads serving county residents. However, the counties have very limited capacity to accept additional road mileage from the Forest Service.

Management Direction

In addition to the 13 risk and benefit questions providing a scientifically-based analysis, the *Nez Perce National Forest Land and Resource Management Plan* (1987, as amended) and the *Clearwater National Forest Land and Resource Management Plan* (1987, as amended) were utilized for management direction. This was accomplished by identifying management areas (MAs) that access suitable timberlands. If roads exist in these MAs, they were identified as likely needed for future vegetation management activities. This management direction filter tends to be conservative in identifying unneeded roads in the Forest Plan suitable timber base. Finer scale analysis is needed to identify roads providing redundant access for vegetation management.

This travel analysis was completed at a forest-wide, broad-scale. As such, finer scale, project-level travel analyses and subsequent NEPA decisions may differ for some road segments. Implementation of opportunities identified in this TAR will follow the appropriate public involvement and NEPA requirements. Where discrepancies between opportunities identified in this TAR and project-level travel analyses exist, the existing NEPA decisions will take precedent, or additional NEPA analysis will be completed at the project-level to evaluate appropriate road-related actions.



analysis. Existing decisions and travel analyses that differ from possible opportunities identified ratings and opportunities invalidate fine scale, project level travel analyses. It is our intent to identify the more obvious opportunities that might be evaluated within the next 5 to 10 years.

A rule set was applied to each road segment based on the aggregate risk and benefit rating to determine preliminary opportunities. The preliminary opportunities would be modified as the other three components of the TAP are integrated. The preliminary rule set was based on a matrix of calculated road risk and benefit, ranging from high risk/high benefit roads to low risk/low benefit roads. The preliminary opportunity spectrum includes three scenarios: storage, reconstruction, or maintenance; removal, storage, or conversion; no change.

Table 8. Preliminary Rule Set Applied to Road Segments.

Risk/Benefit Rating	Preliminary Opportunity Spectrum
High Risk and High Benefit	Storage, Reconstruction, or Maintenance
High Risk and Medium Benefit	Storage, Reconstruction, or Maintenance
High Risk and Low Benefit	Removal, Storage, or Conversion/Storage, Reconstruction, or Maintenance
Medium Risk and High Benefit	Storage, Reconstruction, or Maintenance
Medium Risk and Medium Benefit	Storage, Reconstruction, or Maintenance
Medium Risk and Low Benefit	Removal, Storage, or Conversion/Storage, Reconstruction, or Maintenance
Low Risk and High Benefit	No change
Low Risk and Medium Benefit	No change
Low Risk and Low Benefit	Removal, Storage, or Conversion/Storage, Reconstruction, or Maintenance

Public Input

Figure 1 shows an overview of the travel analysis process, including where the public was asked to review the opportunity map and provide feedback. Public input is discussed in Step 3 and Appendix B.

Assessment Integration

The assessment integration is the process of blending the four sub-processes that make up the TAP. These are the Risk and Benefit Questions, the Financial Analysis, Management Direction, and the Public and Partner Involvement process. Together, they will provide the information the Nez Perce - Clearwater NFs leadership can use to identify the needed road system in subsequent analysis.

For the assessment integration, the risk and benefit scores for each road segment were summed to determine a total score. The analysis team felt it was useful to evaluate risks and benefits for all NFSRs within the Nez Perce - Clearwater NFs even if previous decisions limited the scope of reasonable recommendations.

This cumulative evaluation approach for the risks and benefits sets the context for recommended changes on those roads with greater management flexibility.

Not all risks and benefits are adequately addressed at a forest-scale using existing GIS data. Some assessments requiring fine-scale information, or social issues that are difficult to map, are better identified with more detailed analysis or through project-level NEPA

Figure 1. Overview of the TAP, Highlighting the Public and Partner Agency Input Stage.

associated fine-scale, project-level this TAR do not invalidate the herein. Similarly, risk and benefit identified in this TAR do not

Roads calculated as having medium and high benefit, with low risk, were initially identified as “likely needed for future use” with “no change” recommended. Appropriate maintenance and reconstruction would occur as needed. If any of these roads are in management areas (MAs) that generally discourage/prohibit roads on the landscape, the road will be analyzed in a future, project-level NEPA assessment for appropriate action (i.e., removal, storage, or conversion).

Roads calculated as having medium and high benefit, with medium or high risk, were initially identified as “likely needed for future use” with appropriate actions being to put the road into a stored condition, reconstructing the road, or to perform maintenance. The appropriate specific actions would fit ground conditions, address actual risks observed in the field, and leverage funding. If any of these roads were in management areas (MAs) that generally discourage or prohibit roads on the landscape, the roads will be analyzed in a future, project-level NEPA for appropriate action (i.e., removal, storage, or conversion).

Roads that are calculated to be low benefit, and low, medium, or high risk could be identified as either “likely not needed for future use” or “likely needed for future use,” but with a single purpose. Specific actions would fit ground conditions, address actual risks observed in the field, and leverage funds. Roads in MAs that are suitable timberlands were identified as “likely needed for future use.”

Displaying Existing Information

It’s been recognized that this coarse filter approach to evaluating single purpose roads in the suitable timber base is not effective in identifying redundant access. Additional opportunities to eliminate redundant access have either been identified or will be identified in project-scale analysis. The Opportunity Map in Appendix F displays additional routes planned for decommissioning from several recent NEPA decisions in addition to opportunities identified in this analysis.

Working with Partners

Other government agencies, the Nez Perce Tribe and private landowners have an interest in the management of NFS roads. In some cases partners have rights-of-way or partial ownership on the road system. Some partner agencies rely on NFS roads to accomplish their mission while others may view roads as a threat to their mission.

USDI NOAA National Marine Fisheries Service (NMFS), USDI Fish and Wildlife Service and the Environmental Protection Agency often view specific roads as contrary to their mission. Many other State and local agencies have compelling interests. The Nez Perce Tribe also has compelling interests because of Treaty Rights and the need to balance access to exercise those rights with their active watershed restoration program in partnership with the Forest. Continuing coordination with partners is vital as proposed actions are considered for NFS roads.

Future Road Needs

Access needs for the Nez Perce - Clearwater NFs are anticipated to change over time, requiring either more or less road access on a fluctuating basis. Changes may be driven by public demand, agency budget, Forest Plan revision (and resulting changes to management areas and timber suitability), and adaptation to climate change. Adaptation in fire suppression, vegetation management, and timber production, or watershed management, could drive a need for expanded road access. Restoration projects intended to move existing high-risk roads to lower impact locations would require some new road construction. The exact amount of new road, its location, and the environmental effects associated with each new road will be analyzed at the project level.

Opportunities for Change

Appendix F contains a map of road segments that have been preliminarily identified as having opportunities to change the road system. The opportunities identified consist of several road treatments including removal, storage, or conversion to other uses. These opportunities represent results for this broad-scale analysis supplemented with information from project level NEPA decisions. Refer to the “Opportunities for Change” map in Appendix F for a spatial display of opportunities.

The Nez Perce - Clearwater NFs have an estimated 7,563 miles of NFSRs in their GIS layer. Based on this cursory analysis, approximately 14 miles were identified “not likely needed for future use” and may be considered candidates for conversion to another use, storage for future use, or removal through decommissioning. However, site specific roads analysis and project level assessment will result in substantially more miles identified as unneeded and/or high risk. For example, project level assessments over the past 2 years have resulted in over 100 miles of system road proposed for decommissioning. Most of these roads are overgrown and unmaintained.

Other roads that were rated as “high risk” were identified as candidates for storage for future use, reconstruction or relocation of the road, or additional road maintenance.

Roads considered as “low risk” are the first to be considered for reduced road maintenance (i.e., change to a lower maintenance level).

Roads identified as “likely needed for future use” could become the proposed action in identifying the Minimum Road System as defined in 36 CFR 212.5(b). About 7,549 miles were identified in this group. However, it should be noted that this group of roads would likely change through finer scale analysis and as conditions change.

Integration with Watershed Condition Framework

The map of roads identified with “opportunities for change” has been overlain with a map showing watershed condition (see Appendix G). Forest managers used this information to identify specific watersheds where was the greatest benefit for application of road treatments. Additionally, this map is useful to assist in considering priorities for Watershed Restoration Action Plans. Once high-priority watersheds are selected, the specific road opportunities could be evaluated with finer scale information. There are 21 road segments, totaling 11.9 miles of road, identified as “likely not needed for future use,” which are located in a “Watershed Condition Classes 2 and 3” watershed (Appendix G).

Step 6—Reporting

Key Findings of the Analysis

Roads “likely needed for future use” and “likely not needed for future use” were discussed in the previous step and are included in Appendices E and F. The tables in the appendices include roads recommended for decommissioning, storage, conversion, reconstruction, relocation, and changes in maintenance. Specific road treatments would be evaluated through analysis at a finer scale or during project level NEPA. Key findings of the analysis include the following:

- Approximately 7549 miles of road identified as “likely needed for future use” could be considered as an approximation of the minimum road system.
- Approximately 14 miles of road were identified as “likely not needed for future use.” Just under 12 miles of road lie in a watershed considered a high priority for restoration. Many more miles of unneeded roads will likely be identified through site specific analysis.

- Generally, the greatest opportunity to remove roads from the system is found at the extremities of the road network. Of the road segments considered for “remove, storage, or conversion,” the highest priority for removal would be those segments that are considered high risk and located in a high priority watershed.
- Current and projected road budgets are far from fully funding road maintenance needs. Ongoing access requirements, public and private right-of-ways, and public demand leave limited options to scale the road system within the projected budget. This mismatch in funding and public expectations will likely result in declining user comfort and convenience. One possible result will be that more road miles placed in storage (ML 1). Road maintenance emphasis will be placed on promoting safety and protecting water quality.
- A road system that is not fully funded may increase the risk of impacts on water quality and aquatic ecosystems. Best Management Practices designed into projects will reduce much of this impact.
- Some new road construction for local access may be needed in the future to implement the Forest Plan direction. Road construction needs would likely arise in areas where there is a need to reestablish access for vegetation management, where existing roads need to be relocated to mitigate impacts, or where access is needed for fire fuels treatments in WUI areas.
- Many unauthorized travel routes exist, but were not given detailed consideration in this assessment. These routes are not considered as part of the managed transportation system and are generally considered unneeded. Unauthorized routes represent additional opportunities for ecological restoration and should be evaluated at the project level.
- Adaption to evolving science, resource conditions, changing budgets, changes in public demand, and changes in agency land and resource management plans will affect the utility of this analysis. Efforts to provide appropriate information for identifying future opportunities will be an ongoing effort by the resource specialists, road managers, and line officers.

Definitions

Administrative Unit. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System. (36 CFR 212.1, 36 CFR 261.2, FSH 7705, FSM 7705)

Annual Maintenance. Work performed to maintain serviceability, or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur. Unscheduled or catastrophic failures of components or assets may need to be repaired as a part of annual maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

Area. A discrete, specifically delineated space that is smaller and in most cases much smaller, than a Ranger District. (36 CFR 212.1, 36 CFR 261.2, FSM 7705)

Cooperative Road Right-of-Way Agreement. A contractual document that defines the conditions under which the parties agree to do business and incur fiscal obligations in the construction, use, and maintenance of a shared road system. Within the terms of a Cost Share Agreement, easements are exchanged and a Road Maintenance Agreement is developed.

Deferred Maintenance. Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or non-critical at any point in time. Continued deferral of non-critical maintenance will normally result in an increase in critical deferred maintenance. Code compliance (e.g. life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations, other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance. (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998)

Designated Road, Trail, or Area. A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map (MVUM). (36 CFR 212.1, FSM 7705)

Forest Transportation Atlas. A display of the system of roads, trails and airfields of an administrative unit. (36 CFR 212.1, FSM 7705)

Forest Transportation System. The system of National Forest System roads, National Forest System Trails, and airfields on National Forest System lands. (36 CFR 212.1, FSM 7705)

Maintenance. The upkeep of the entire forest transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization. (36 CFR 212.1)

Minimum Road System. The road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan, to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the

identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance (36 CFR 212.5(b)(1)).

Motor Vehicle Use Map. A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System. (36 CFR 212.1, FSM 7705)

National Environmental Policy Act (NEPA) procedures. The rules, policies, and procedures governing agency compliance with the National Environmental Policy Act set forth in 50 CFR parts 1500-1508, 7 CFR part 1b, Forest Service Manual Chapter 1950, and Forest Service Handbook 1909.15. (36 CFR 251.51)

National Forest System Road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2, FSM 7705, FSH 7709.56.40.5)

National Forest System Trail. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1, 36 CFR 261.2, FSM 7705, FSM 2353.05, FSH 2309.18.05)

Public Road. A road under the jurisdiction of and maintained by a public road authority and open to public travel. (23 USC 101(a), 23 CFR 460.2, 23 CFR 660.103, FSM 7705)

Road. A motor vehicle route over 50 inches wide, unless identified and managed as a trail. (36 CFR 212.1, FSM 7705)

Road Construction or Reconstruction. Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road. (36 CFR 212.1, FSM 7705)

Road Decommissioning. Activities that result in stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1)

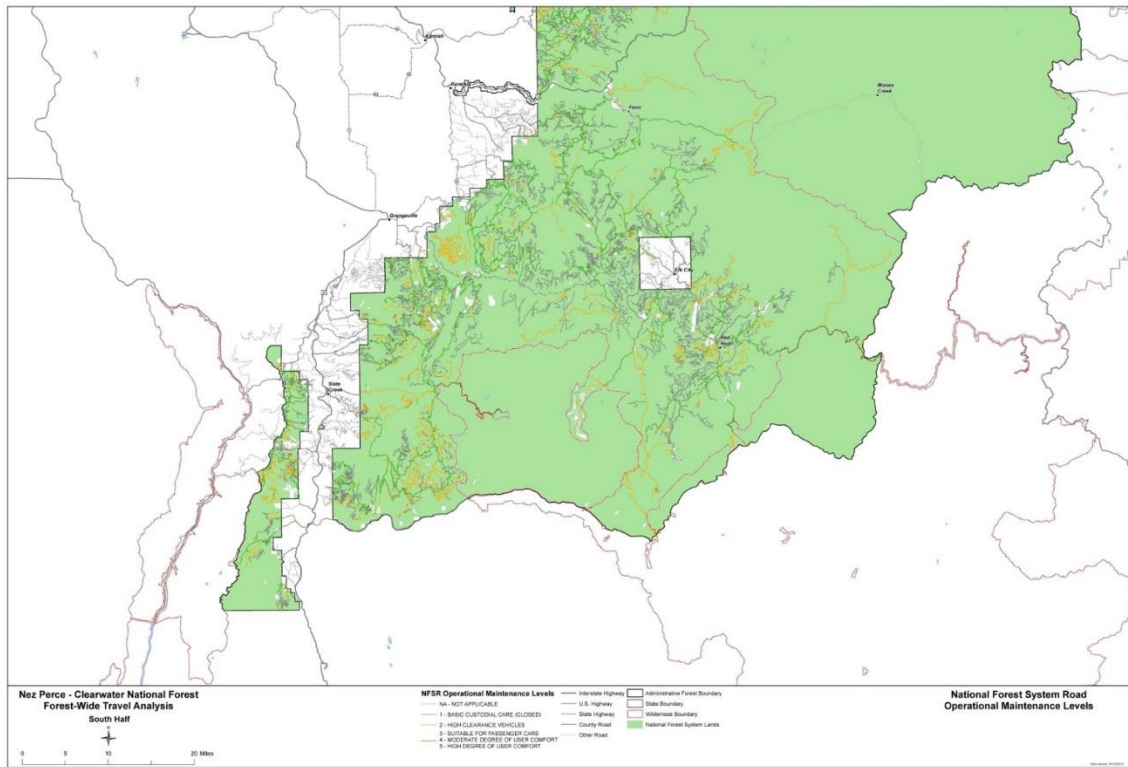
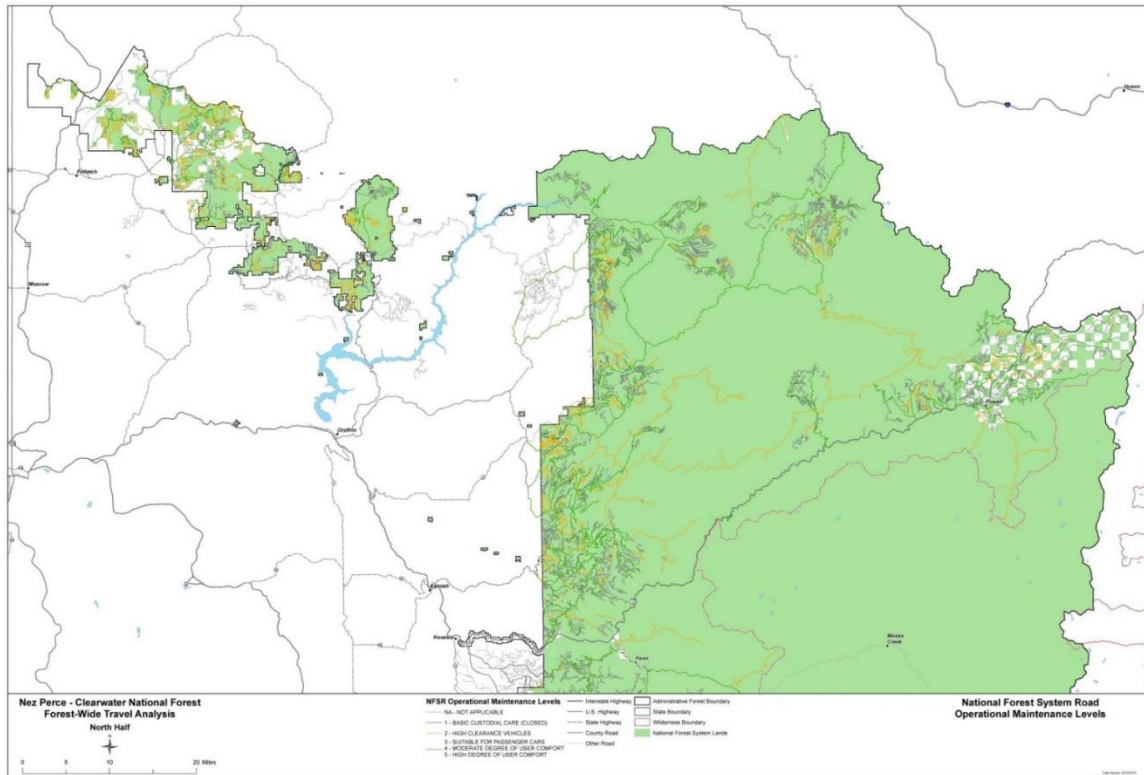
Special Use Authorization. A permit, term permit, lease, or easement which allows occupancy, use, rights, or privileges of National Forest System land. (36 CFR 251.51, 36 CFR 261.2)

Suitable Timber Land. National Forest system land for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be adequately restocked and for which there is management direction that indicates that timber production is an appropriate use of that area.

Unauthorized Road or Trail. A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. (36 CFR 212.1, FSM 2353.05, FSM 7705)

Vehicle. Any device in, upon, or by which any person or property is or may be transported, including any frame, chassis, or body of any motor vehicle, except devices used exclusively upon stationary rails or tracks. (36 CFR 261.2)

Appendix A - Roads by Maintenance Level



Appendix B

Key Concerns Identified Through Public Involvement

Nine comments from six different commenters were received during the comment period through the AGOL (ArcGIS Online).

Specific Roads and Areas

The public identified specific roads and areas that should or should not be retained for future use along with concerns regarding maintenance response to the Forest Service's request for public input.

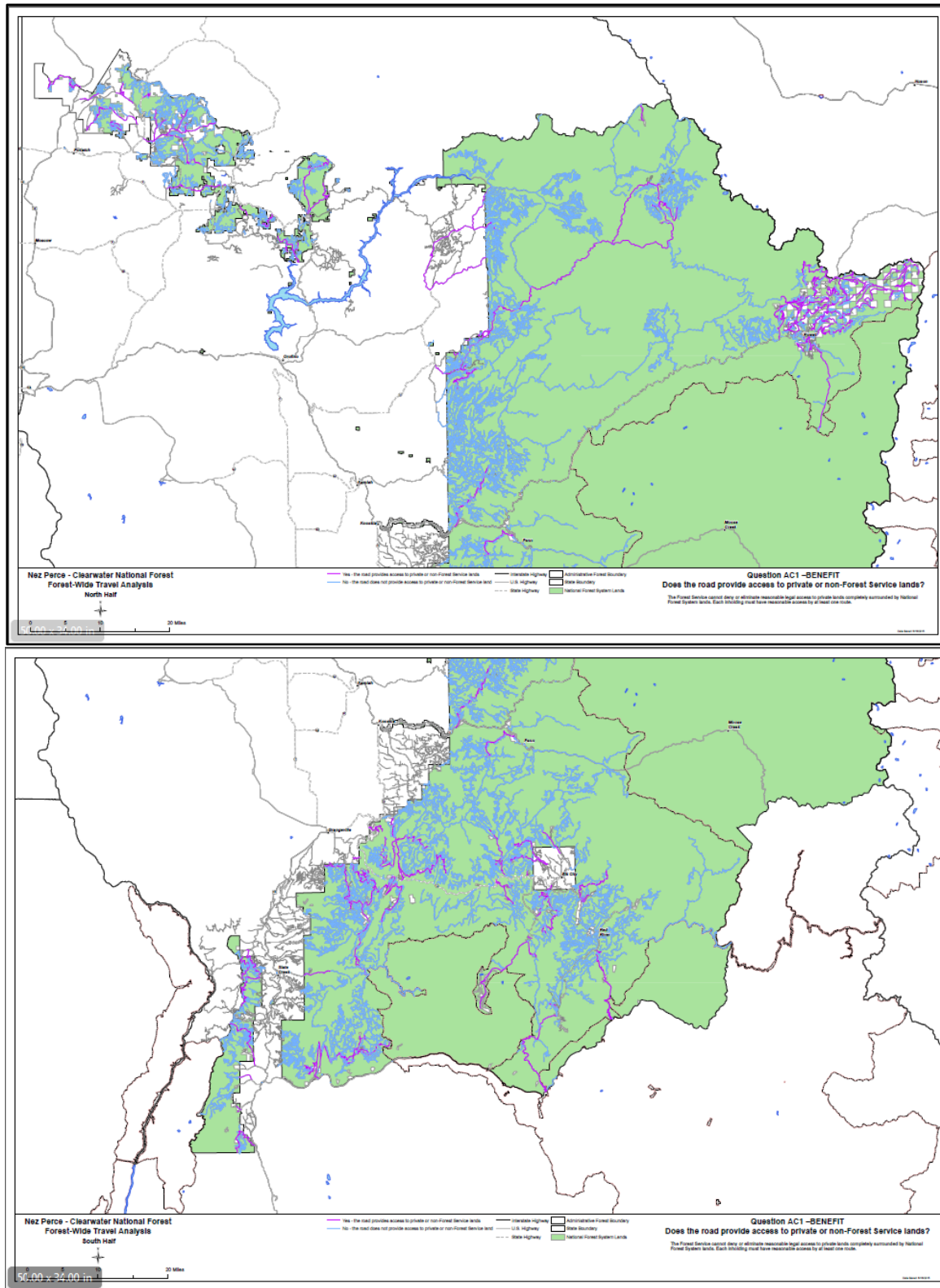
- Road 1856 - This road should be maintained for non-motorized use. It is a very popular road that provides a variety of recreational opportunities.
- Road 250 - Road 250 along the Orogrande River section is always the worst section of road and never seems to get the attention as the rest of Road 250. For instance, this year Road 250 was graded from bungalow to Black Canyon; however, the road getting to bungalow was a mess. Maybe spend some grading dollars on the upper part as well.
- Road 568-B - Road is misidentified from this point to the gate on 568A. The road shown beyond this point is a Plum Creek logging road.
- Mush Saddle Area - The density of roads in the Mush Saddle area compromises ecological integrity, soils, watersheds, wildlife, etc. Many of these roads do not contribute towards the long-term management needs of the landscape and should be considered for restoration.
- The Cedars Area: The density of jammer roads in this area compromises ecological integrity. These roads should be considered for decommissioning.
- Road 111 - The Forest Service has already committed to decommissioning this road, and for good reasons. I don't see where in this input process the public is informed of this fact.
- Road 279 - On Road 279 we run on the subgrade in several areas due to lack of gravel. On this road you also have to dodge large chuckholes everywhere. On the 2021/2022 road (depending on which map you read) between the 279 and Beartrap Saddle, there is a sluff area where the road bed is over a foot low in 80 percent of the roadbed for approx. 75 feet. We travel only a small percentage of the forest but feel this is representative of the whole forest road system.
- Deception Point Area: Each of the road segments that surround this push pin appear as "hangers." That is unconnected road segments. Please review and revise the roads analysis layer to reflect the roads that are currently on the landscape. In the absence of a valid inventory it will be challenging to identify a minimum network of roads.
- Deception Point Area: Numerous roads appear not to be part of the inventory. The GIS layers should be reassessed to determine whether additional roads exist on the landscape that warrants review (and likely decommissioning). The density of roads in this area compromises the terrestrial and aquatic integrity of the area.

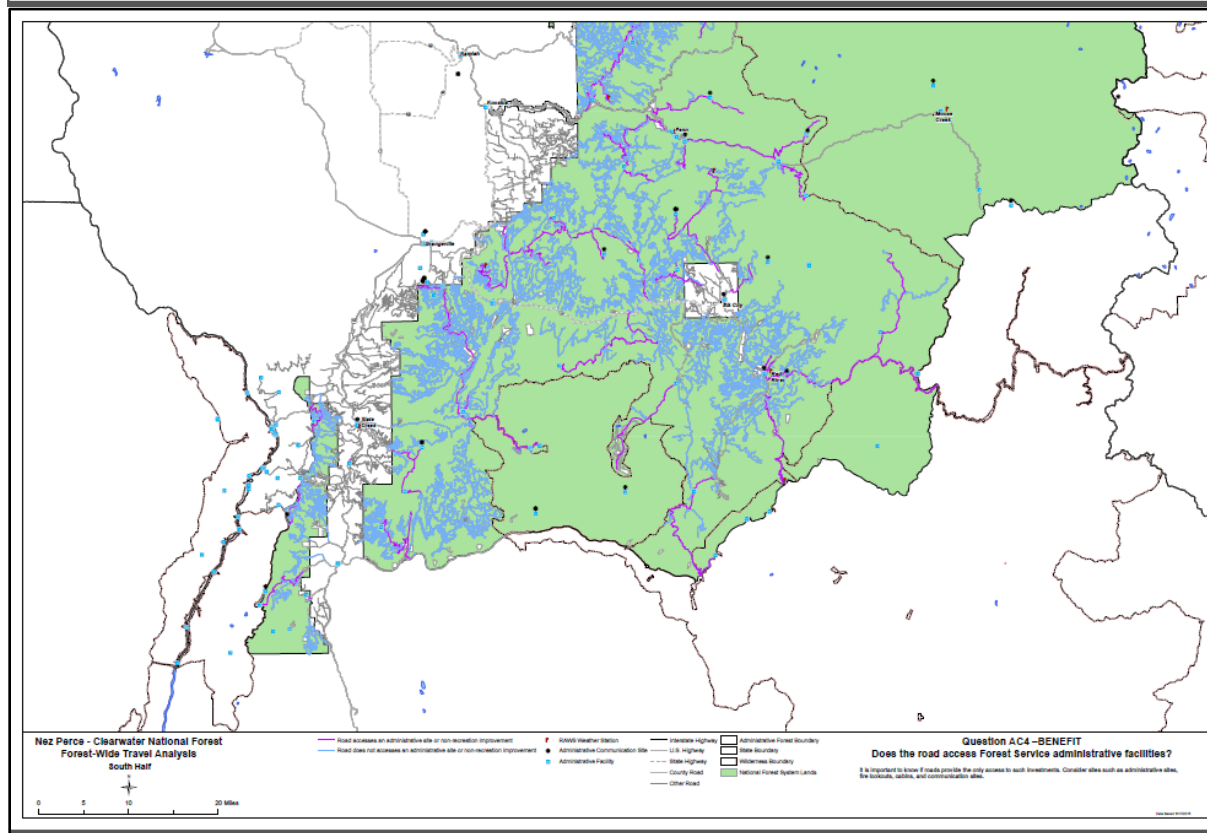
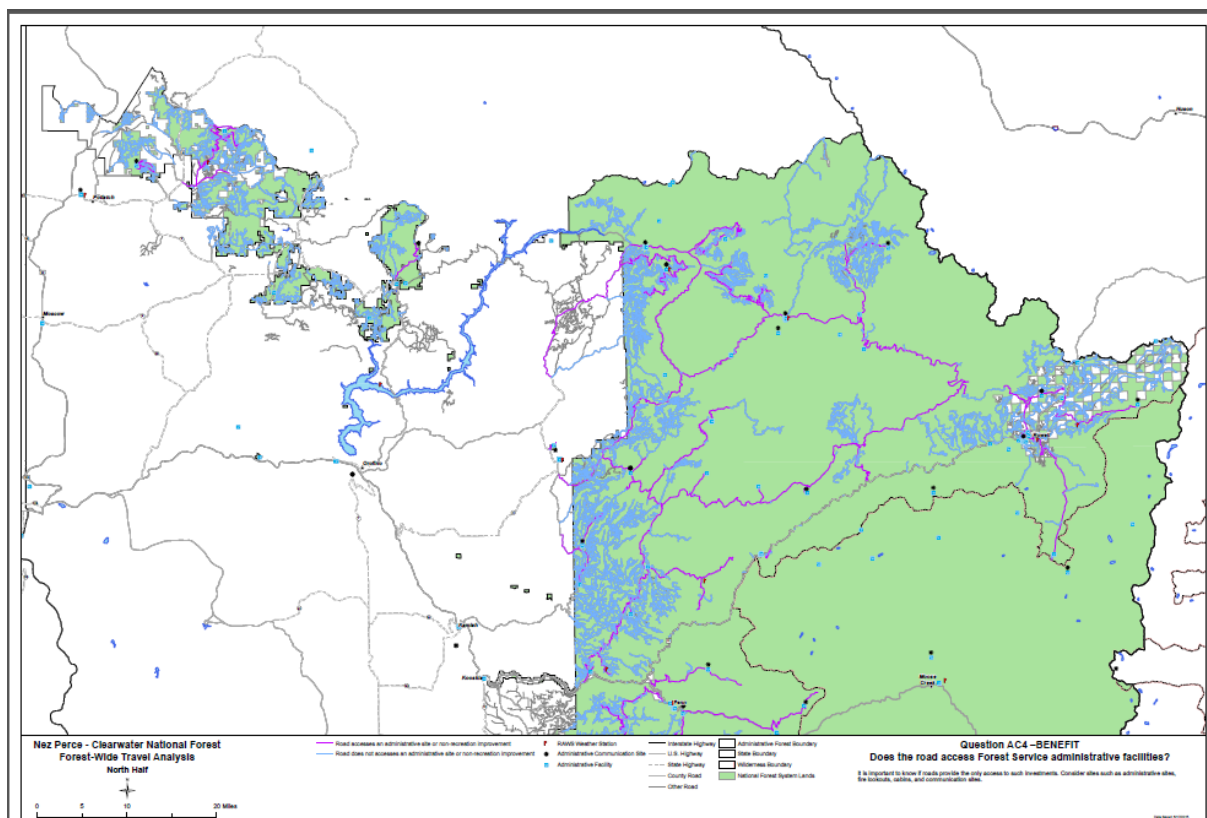
TAP Methodology and Analysis

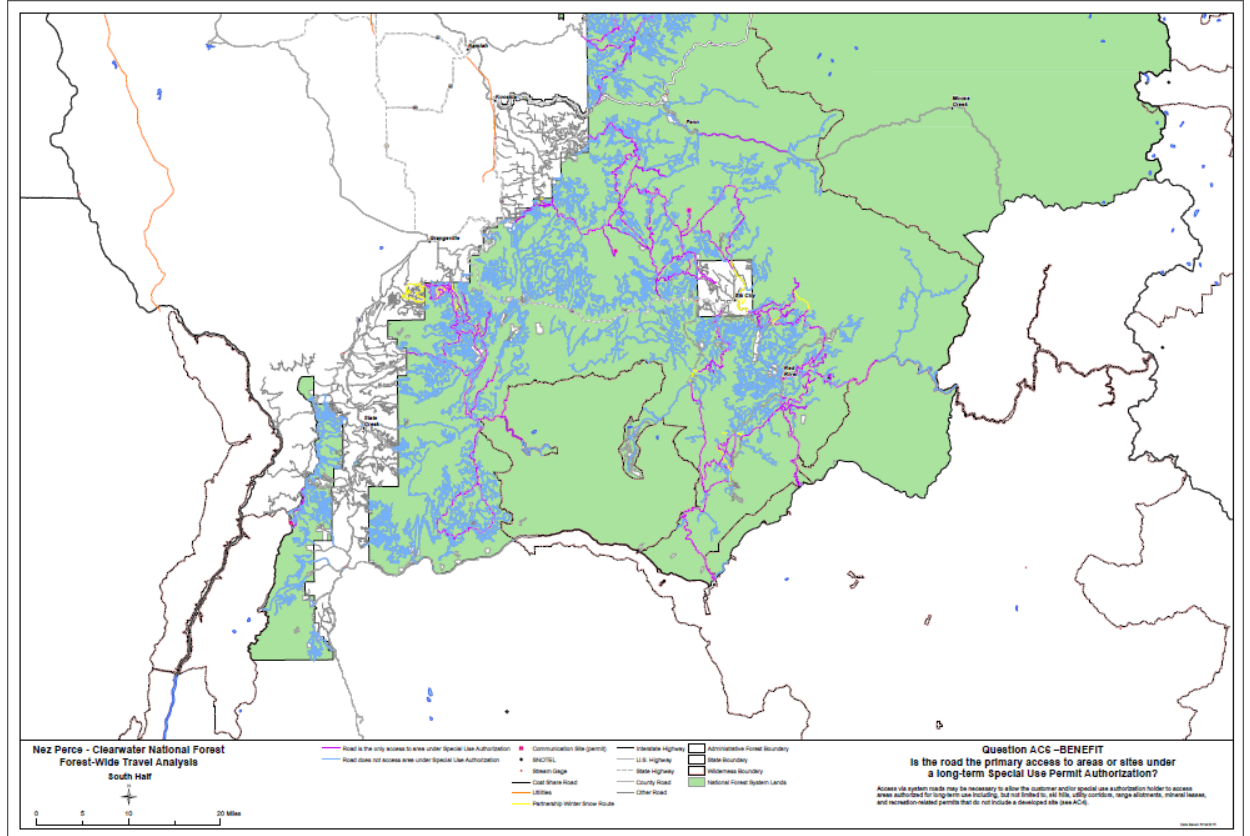
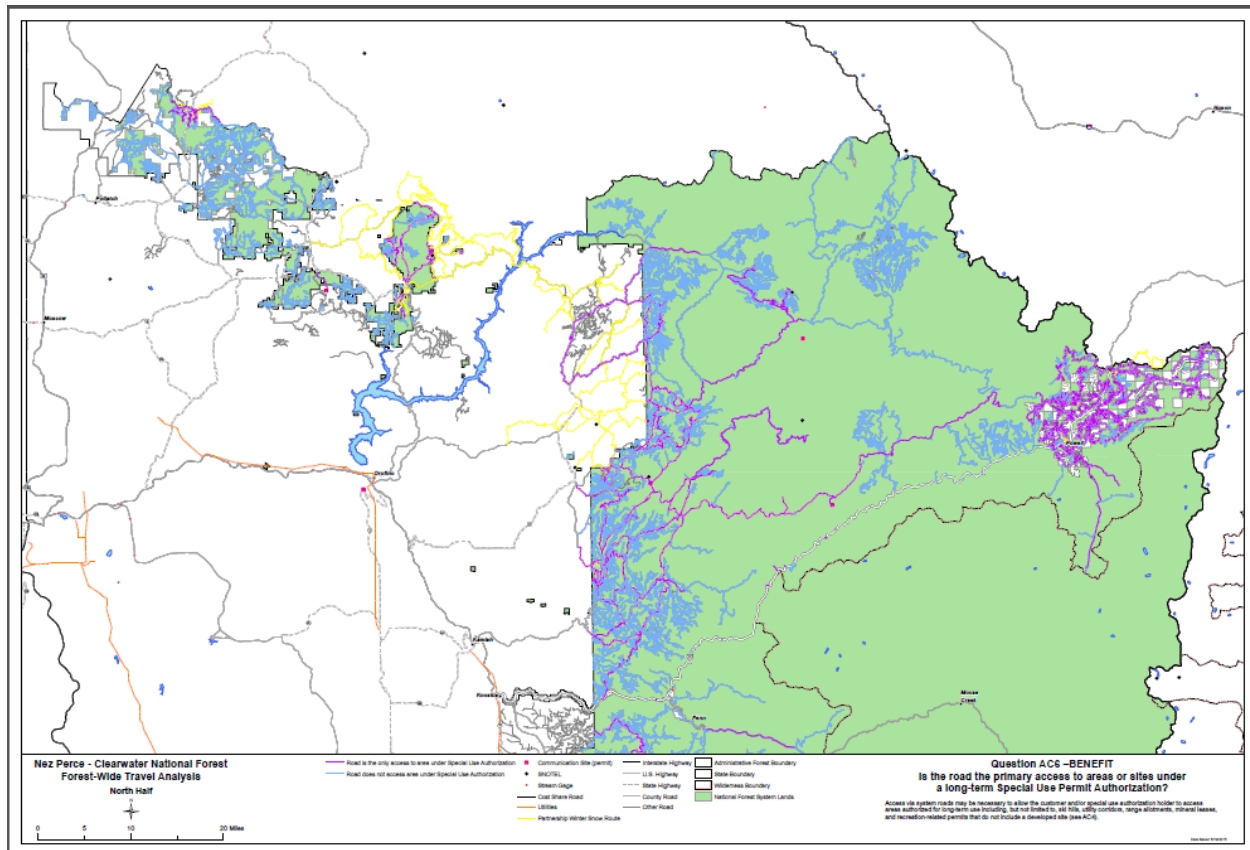
A number of concerns were raised about the purpose, methodology used, and factors/criteria considered, and completeness of information used for the TAP:

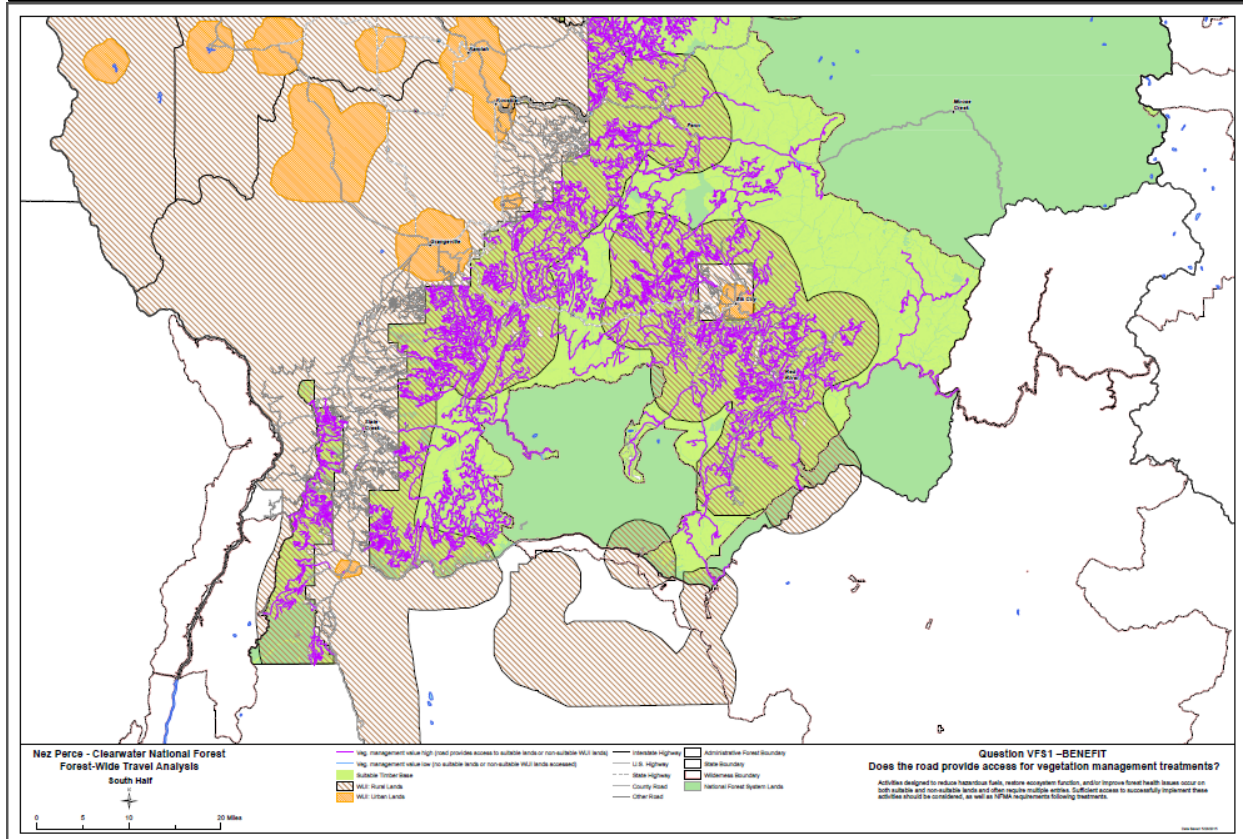
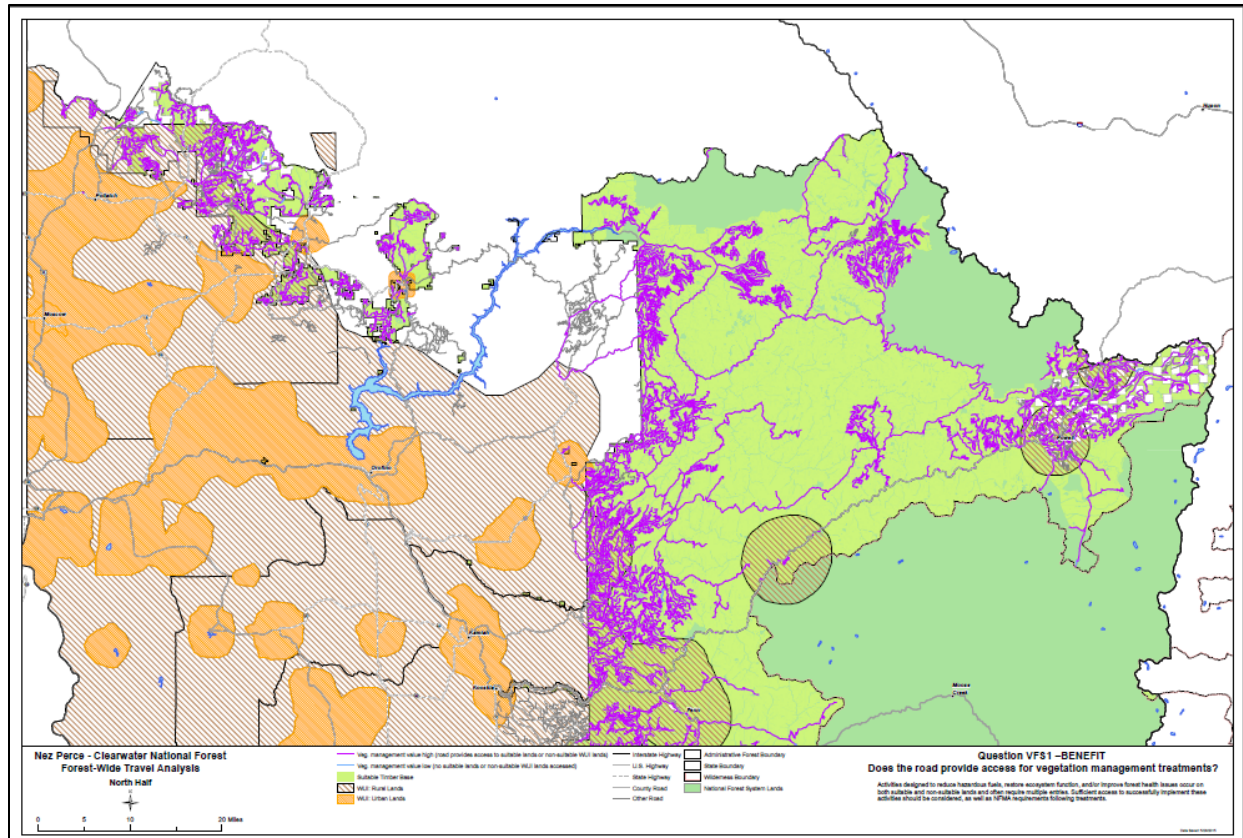
- Your website says, participate by commenting on the Forest's preliminary identification of its existing NFSRs and opportunities for change which are displayed on the map. I don't see any "opportunities for change" displayed on the map anywhere. Apparently this "public process" doesn't involve being informed at the appropriate point in the process!"

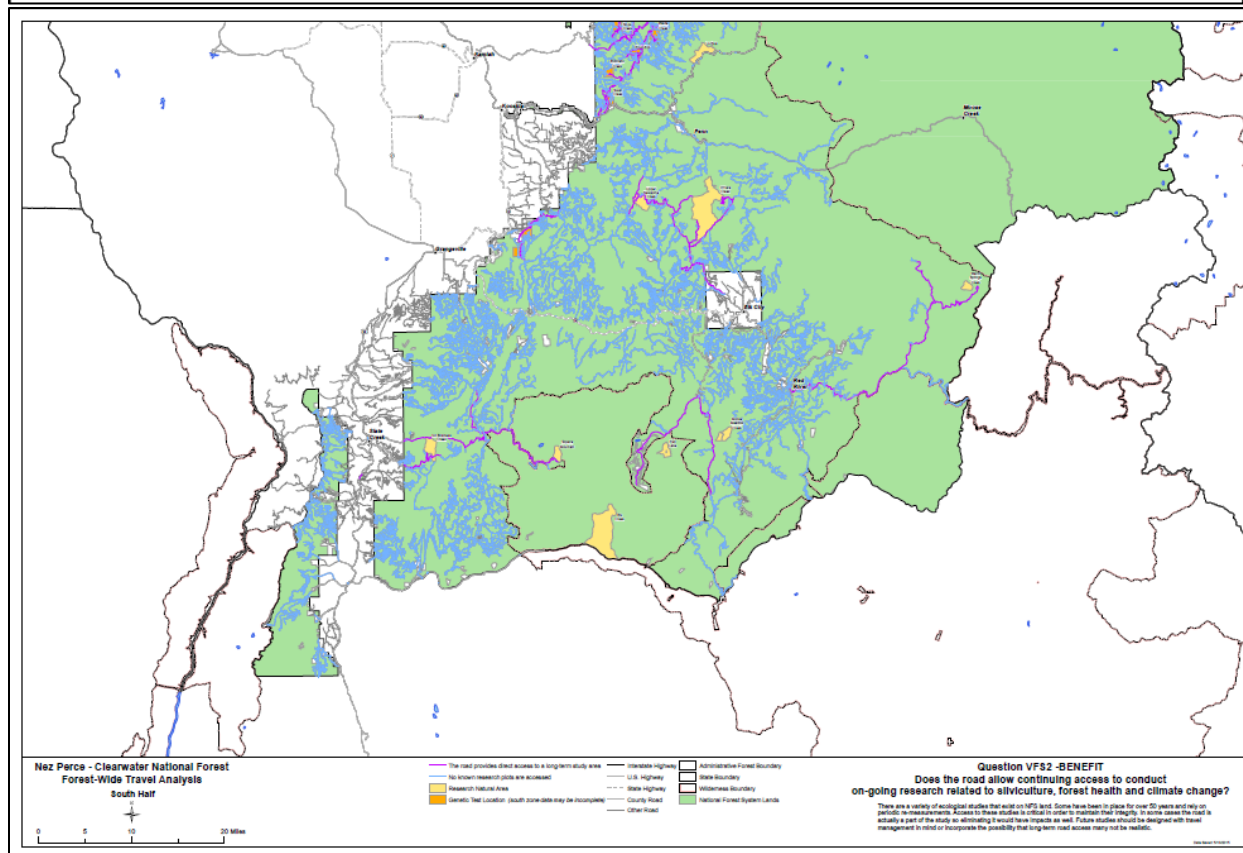
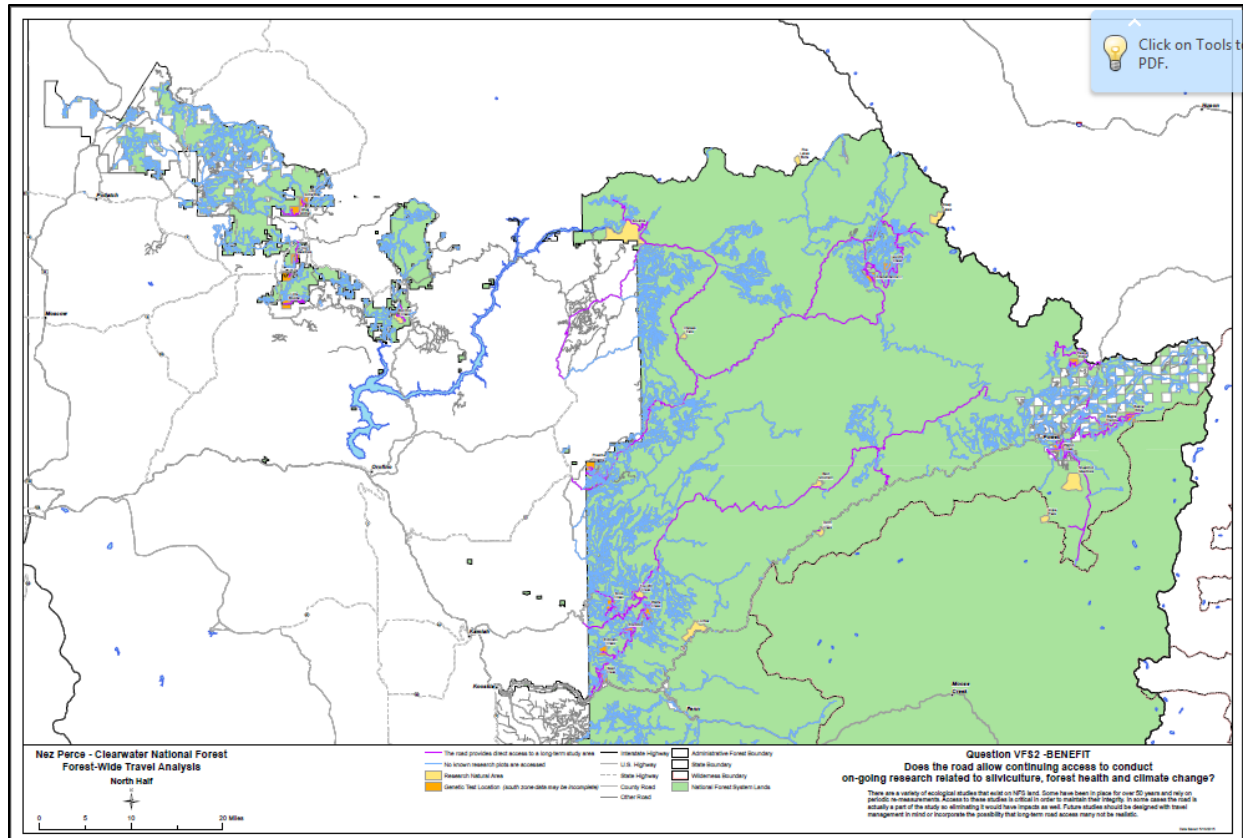
Appendix C - Part 1: Benefits

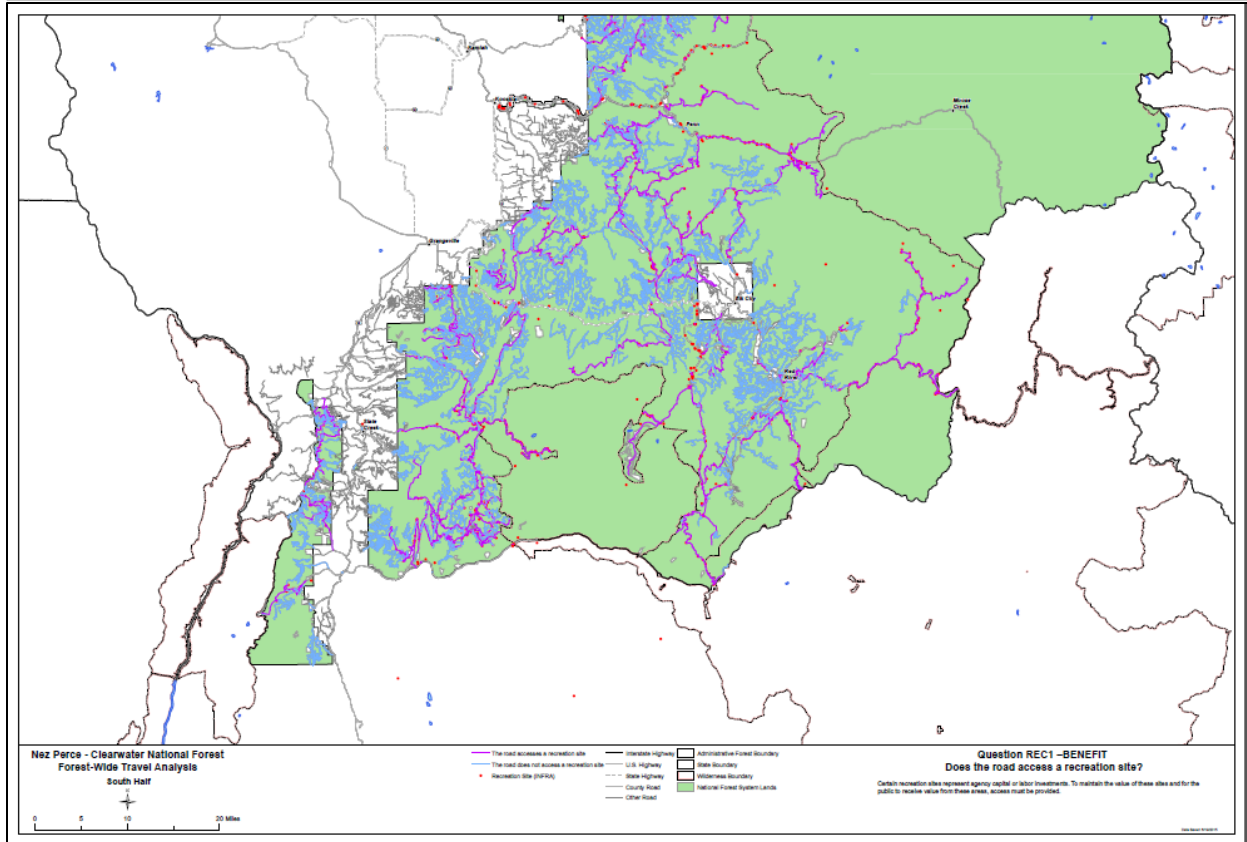
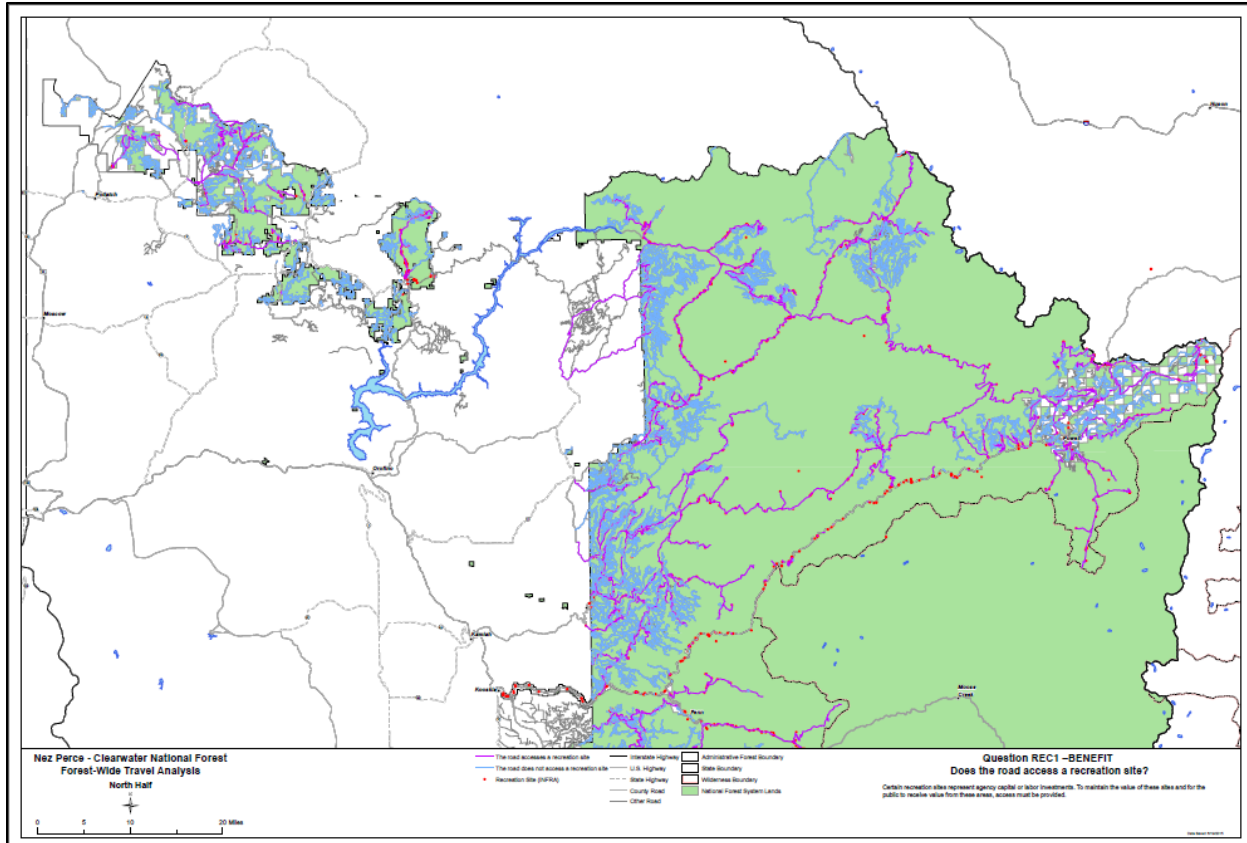


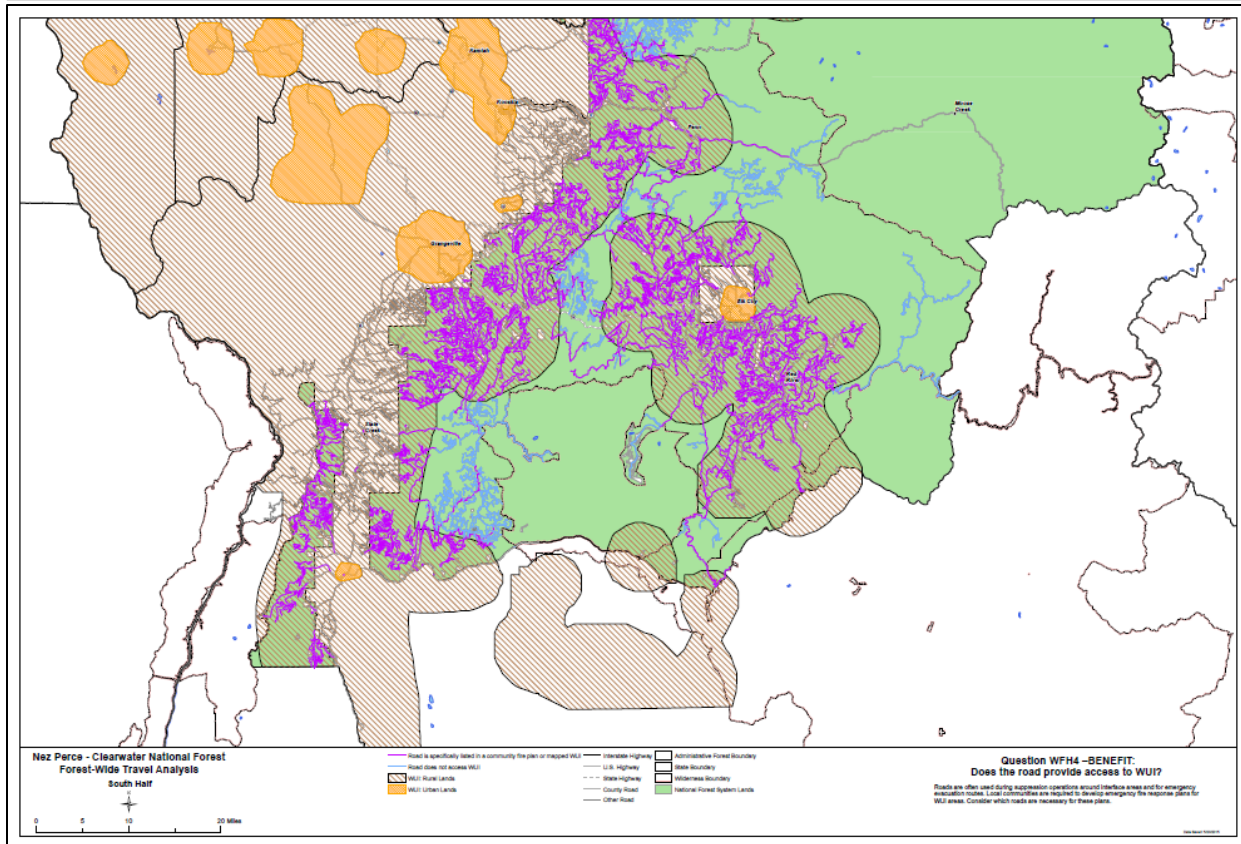
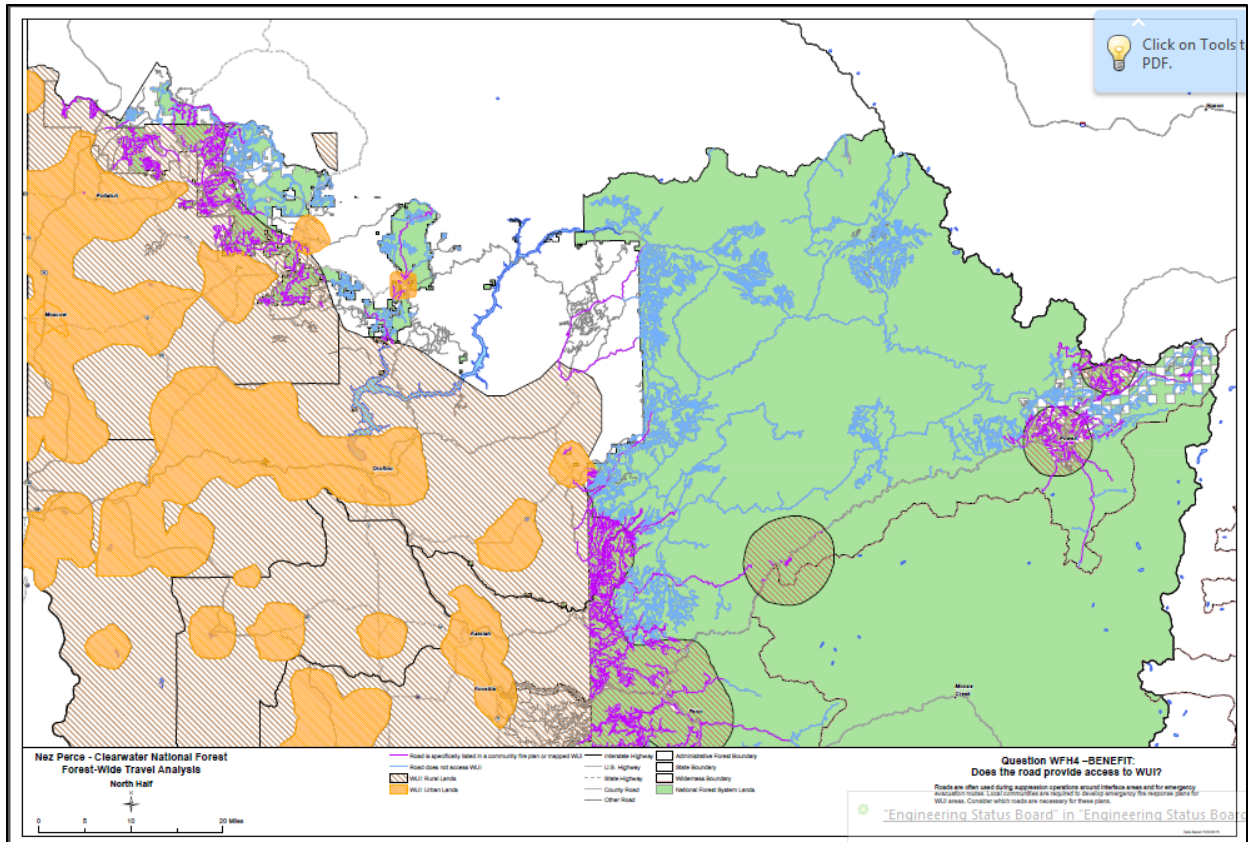




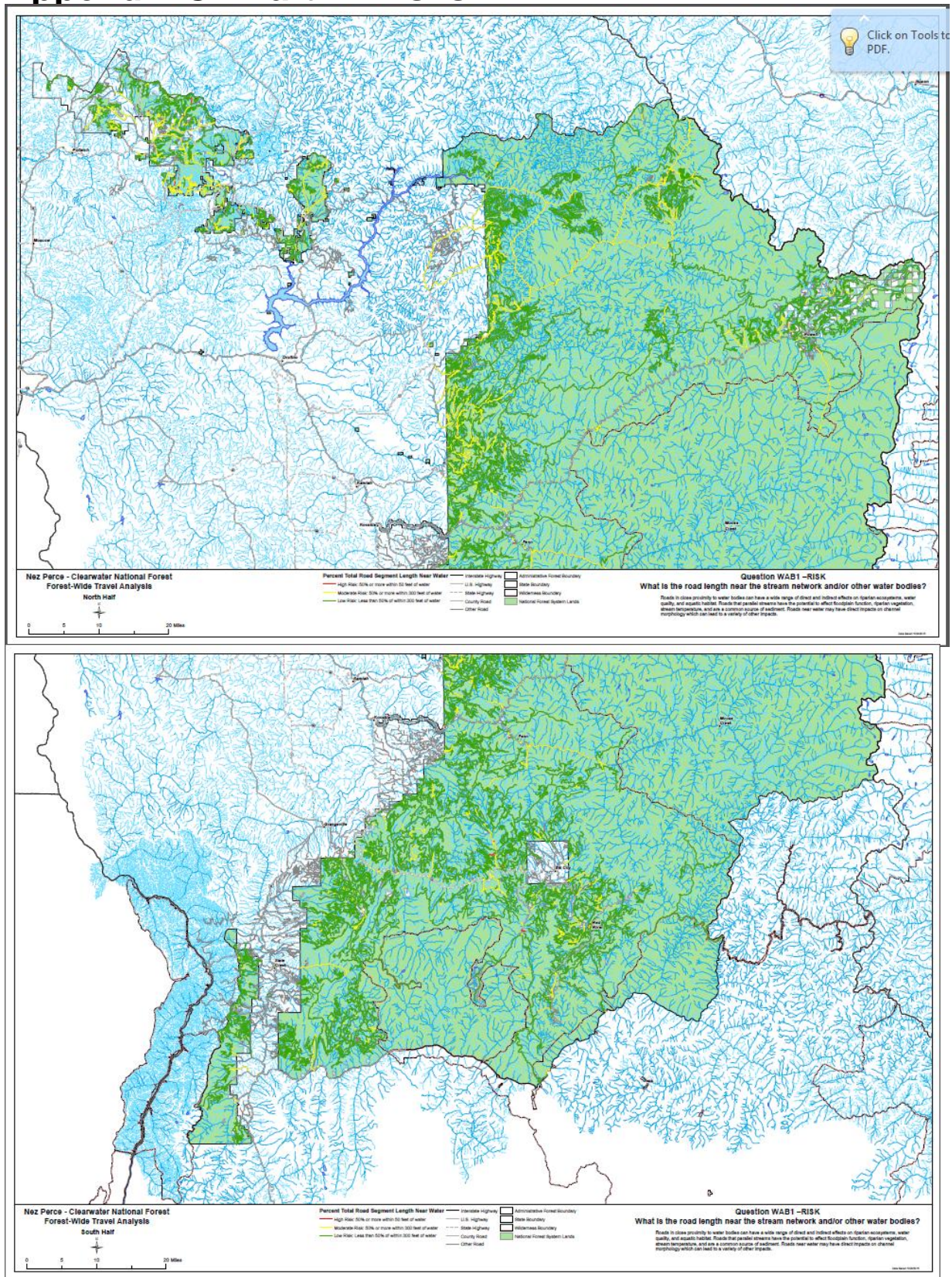


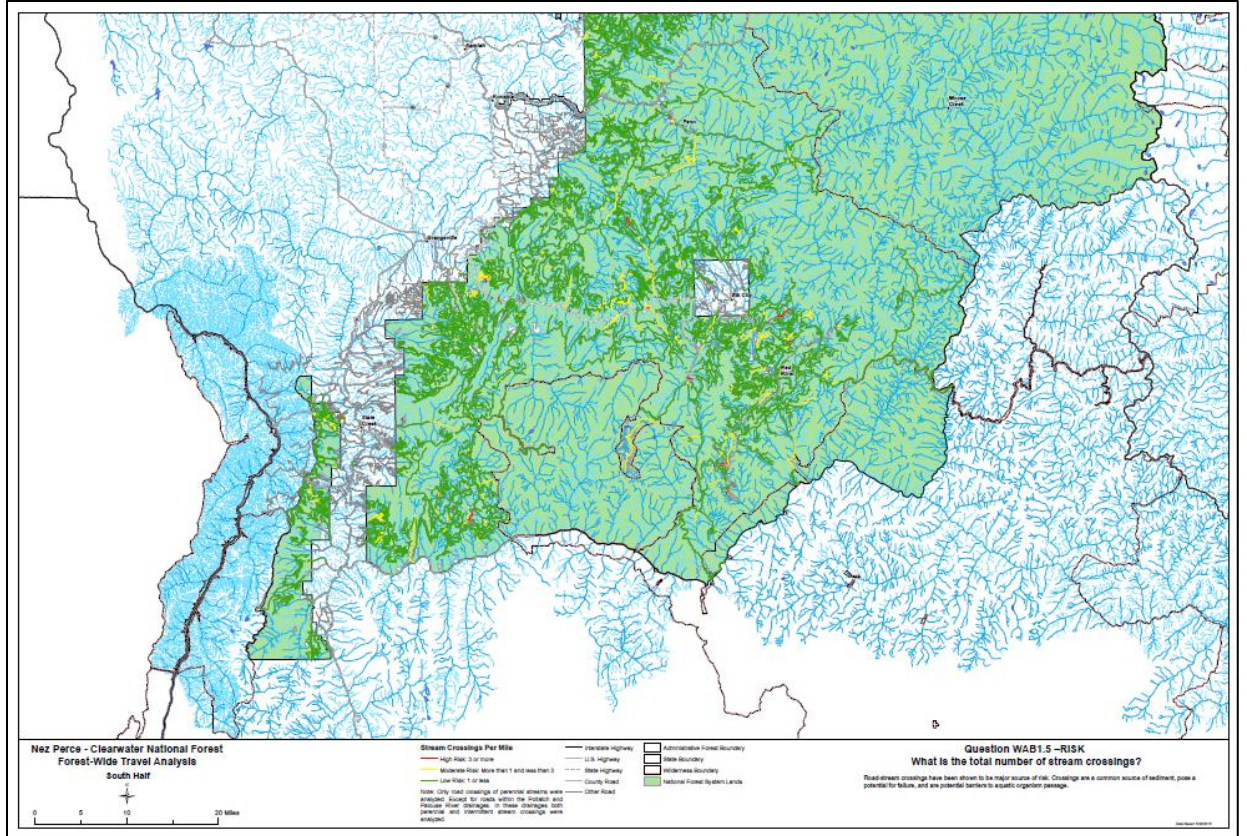
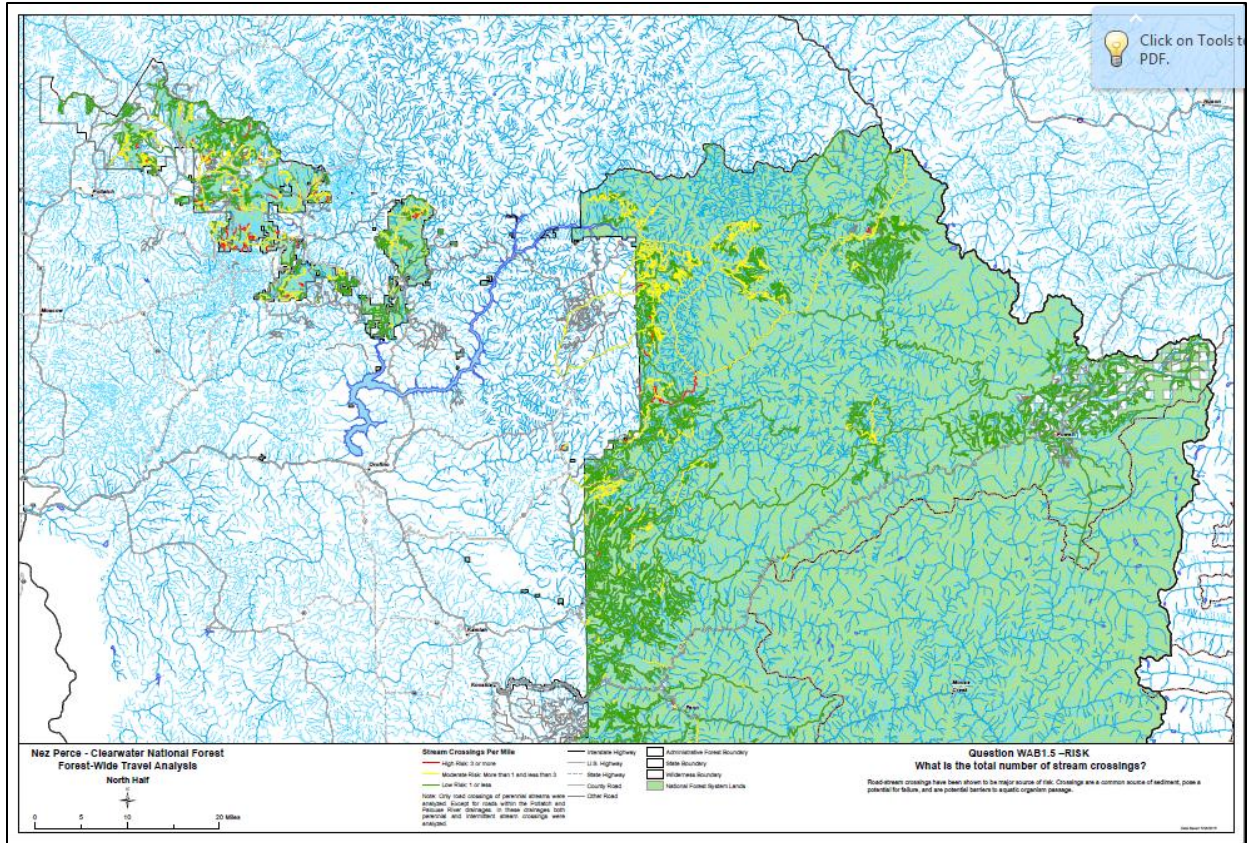


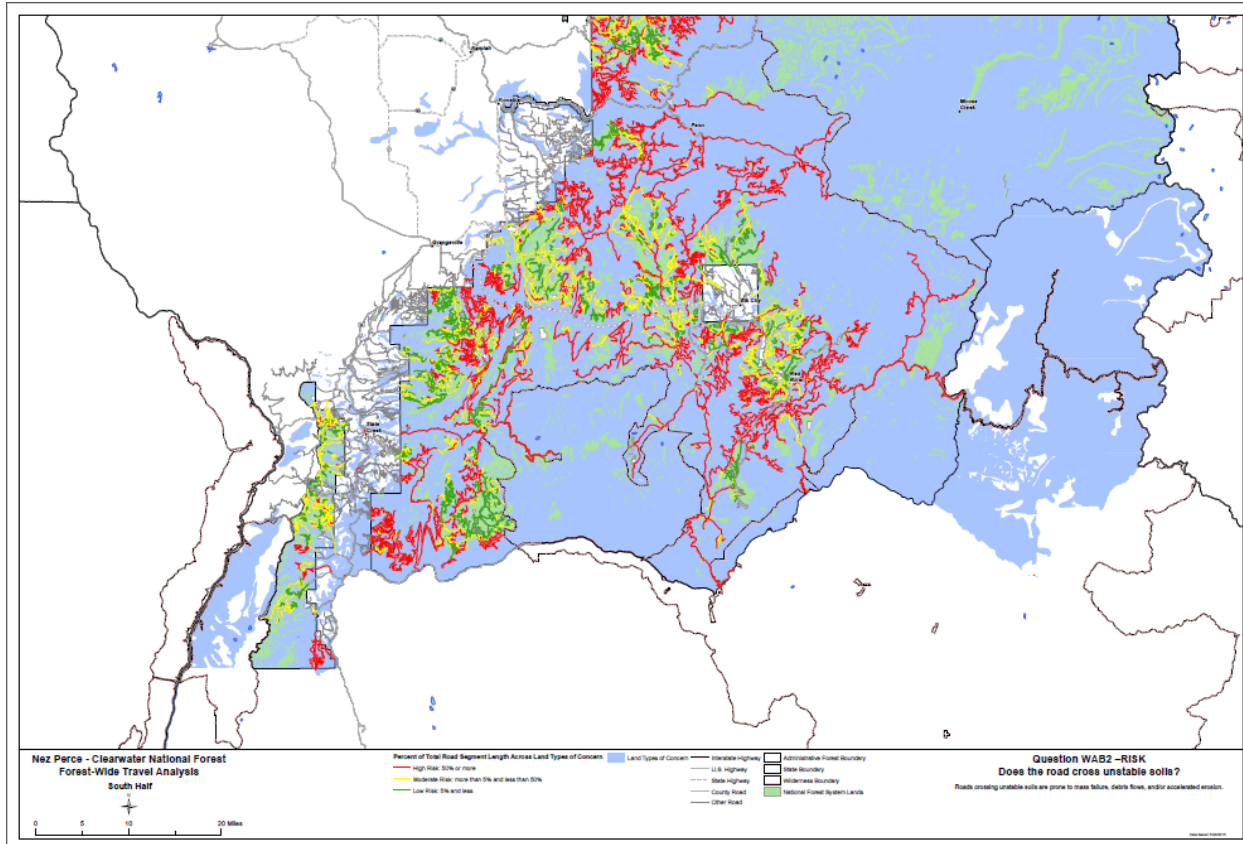
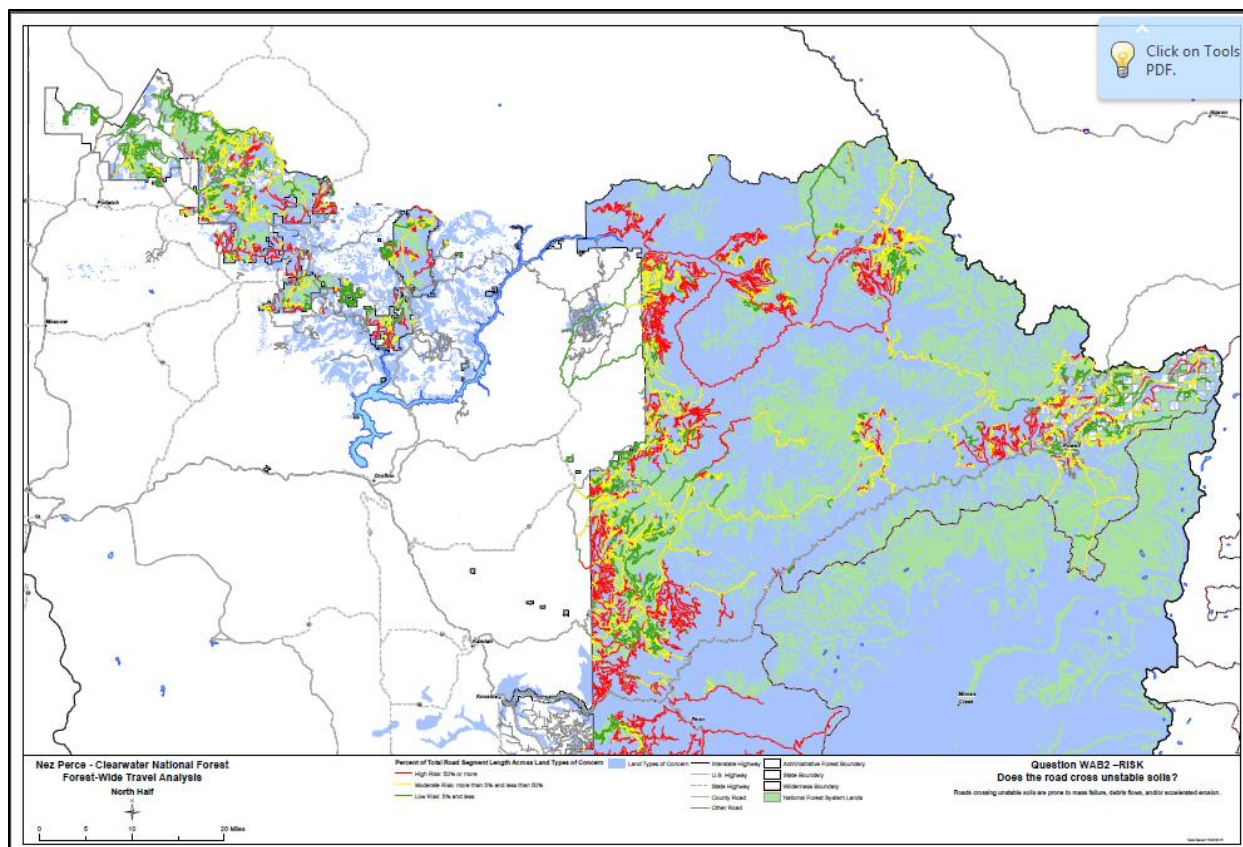


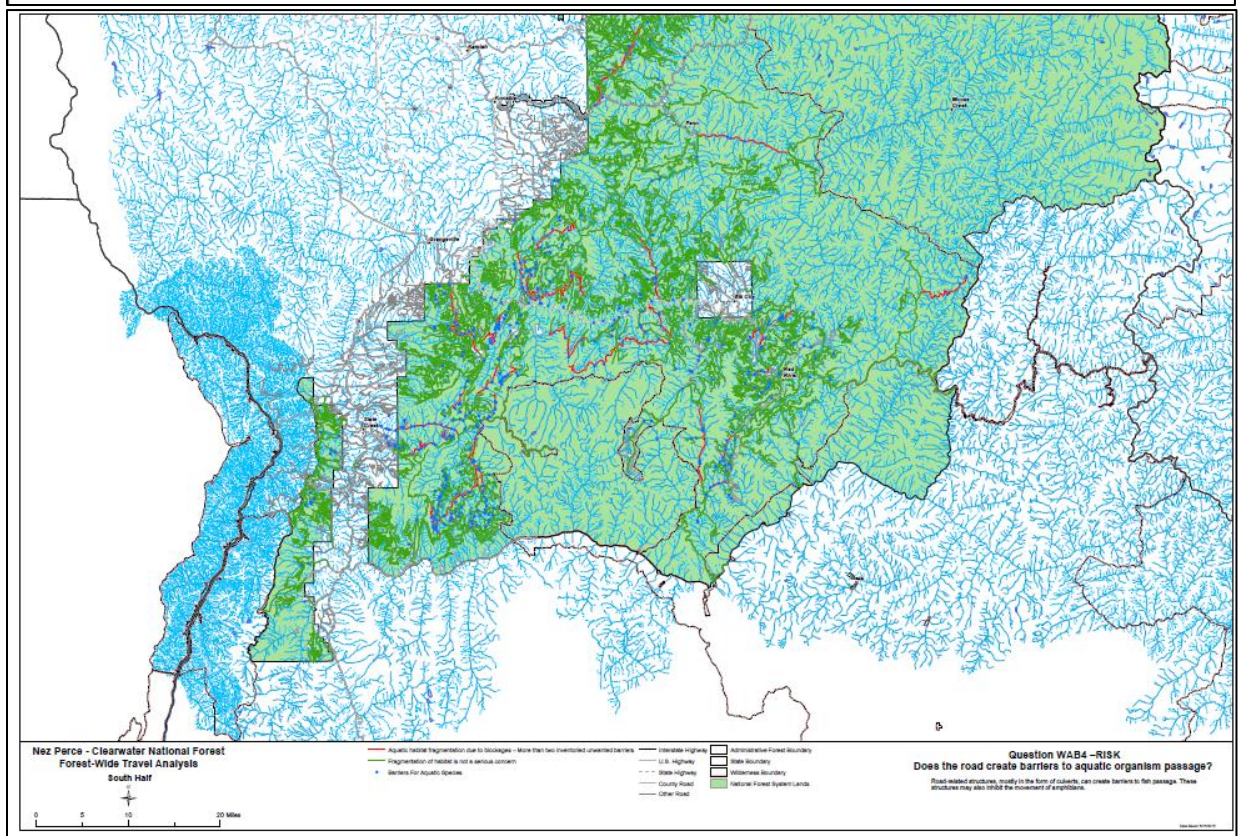
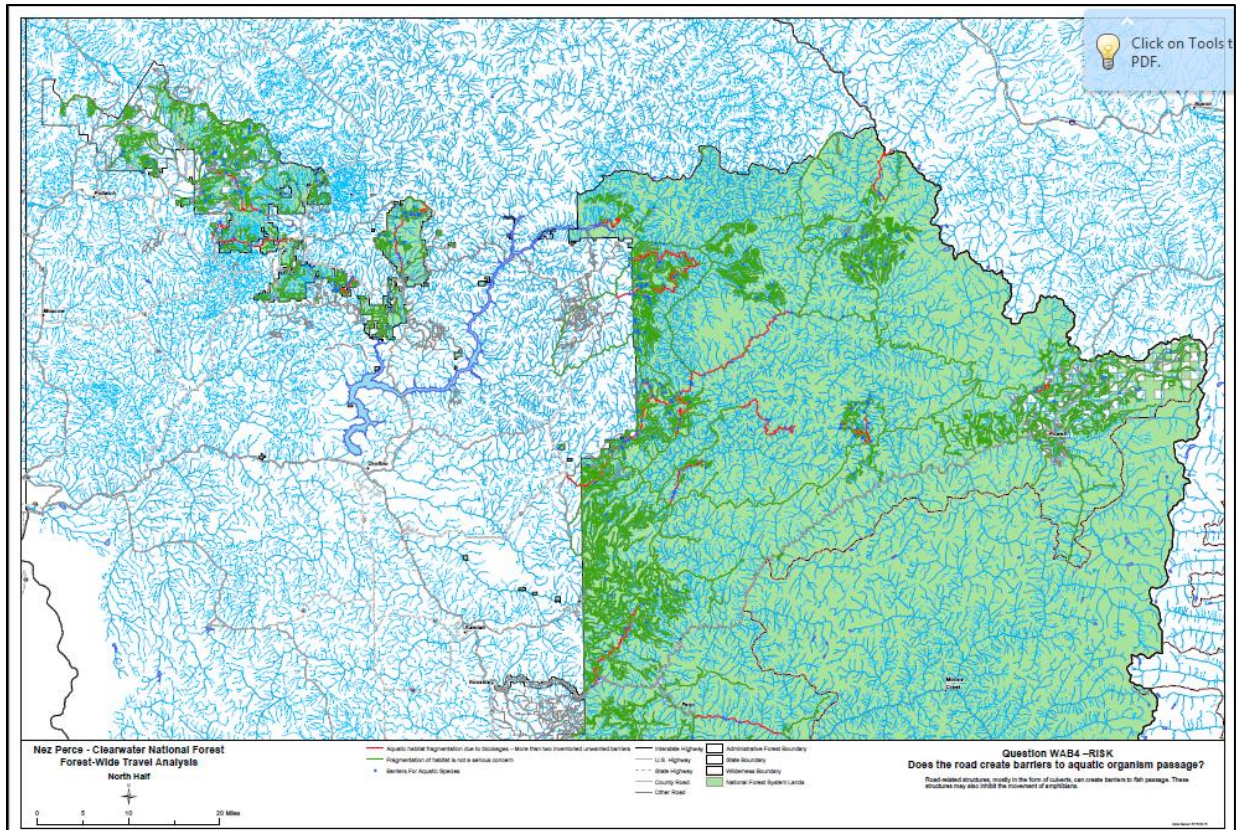


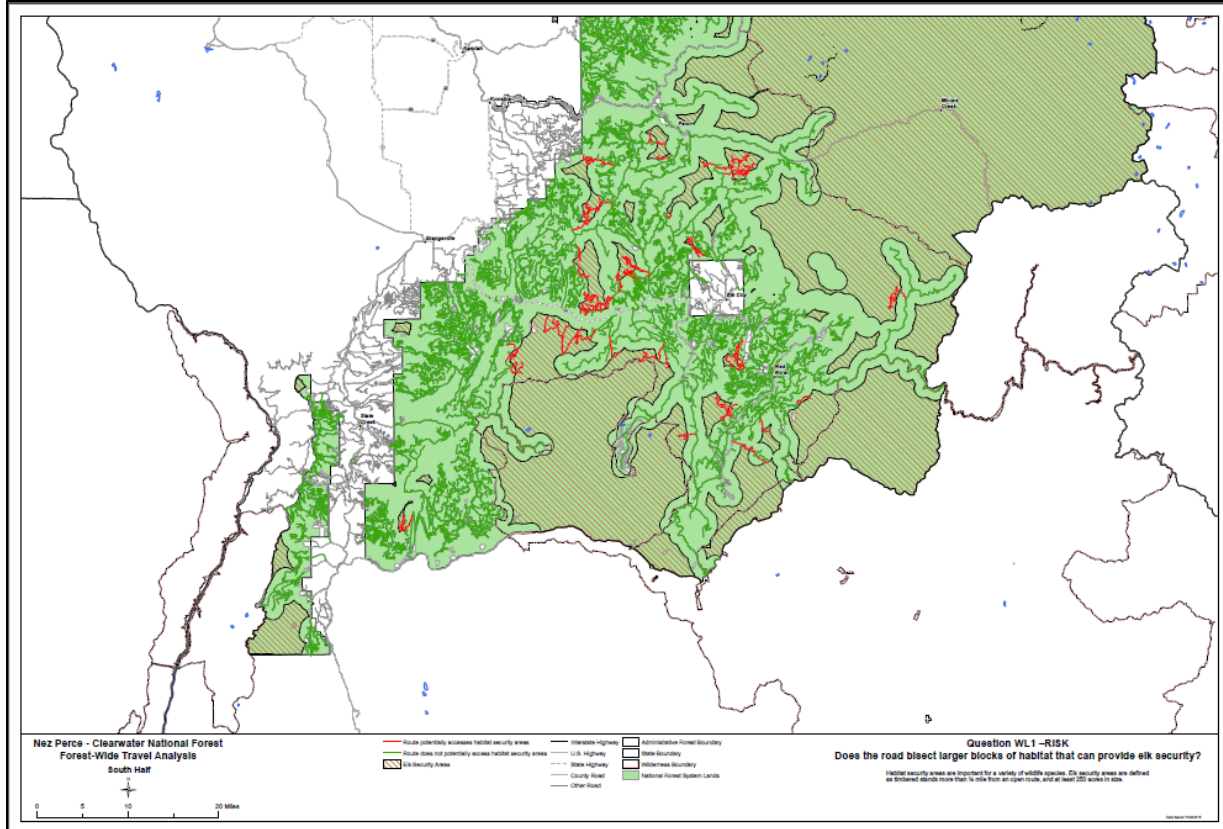
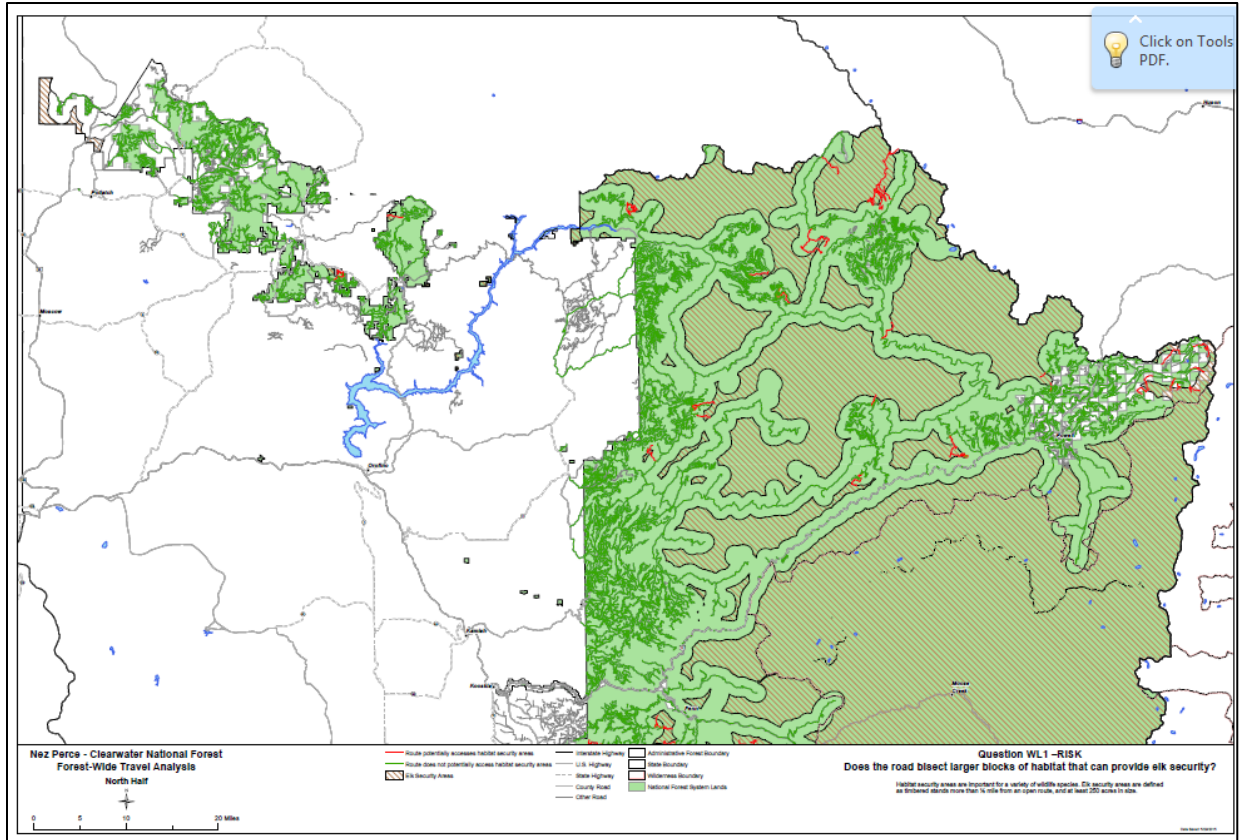
Appendix C - Part 2: Risks

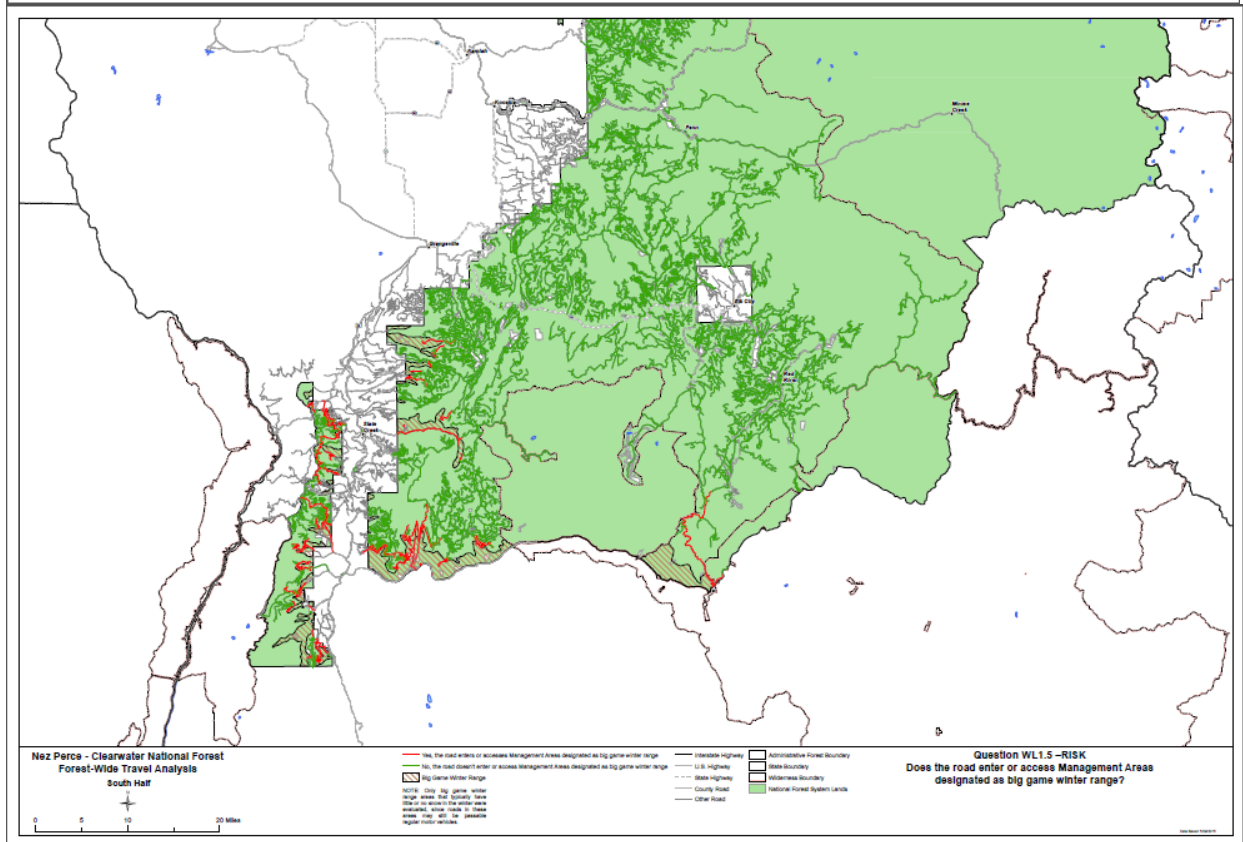
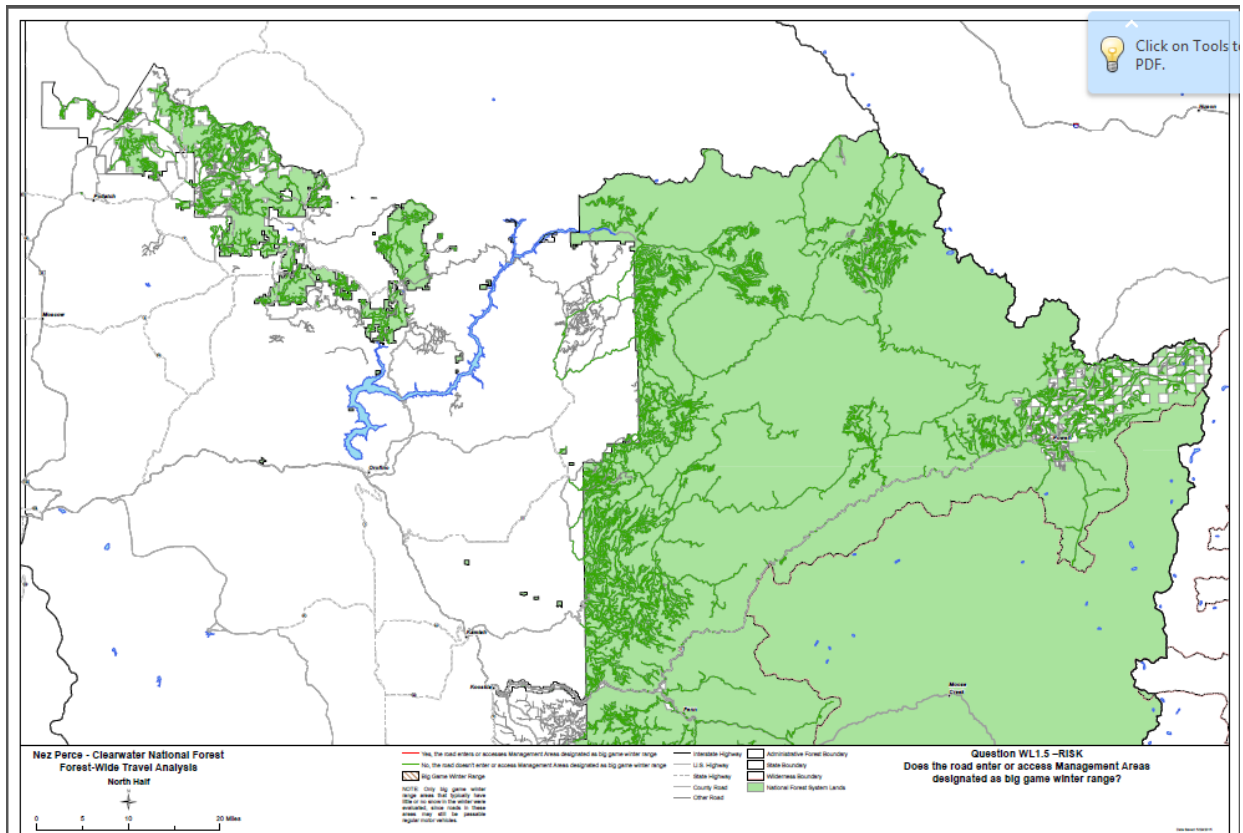




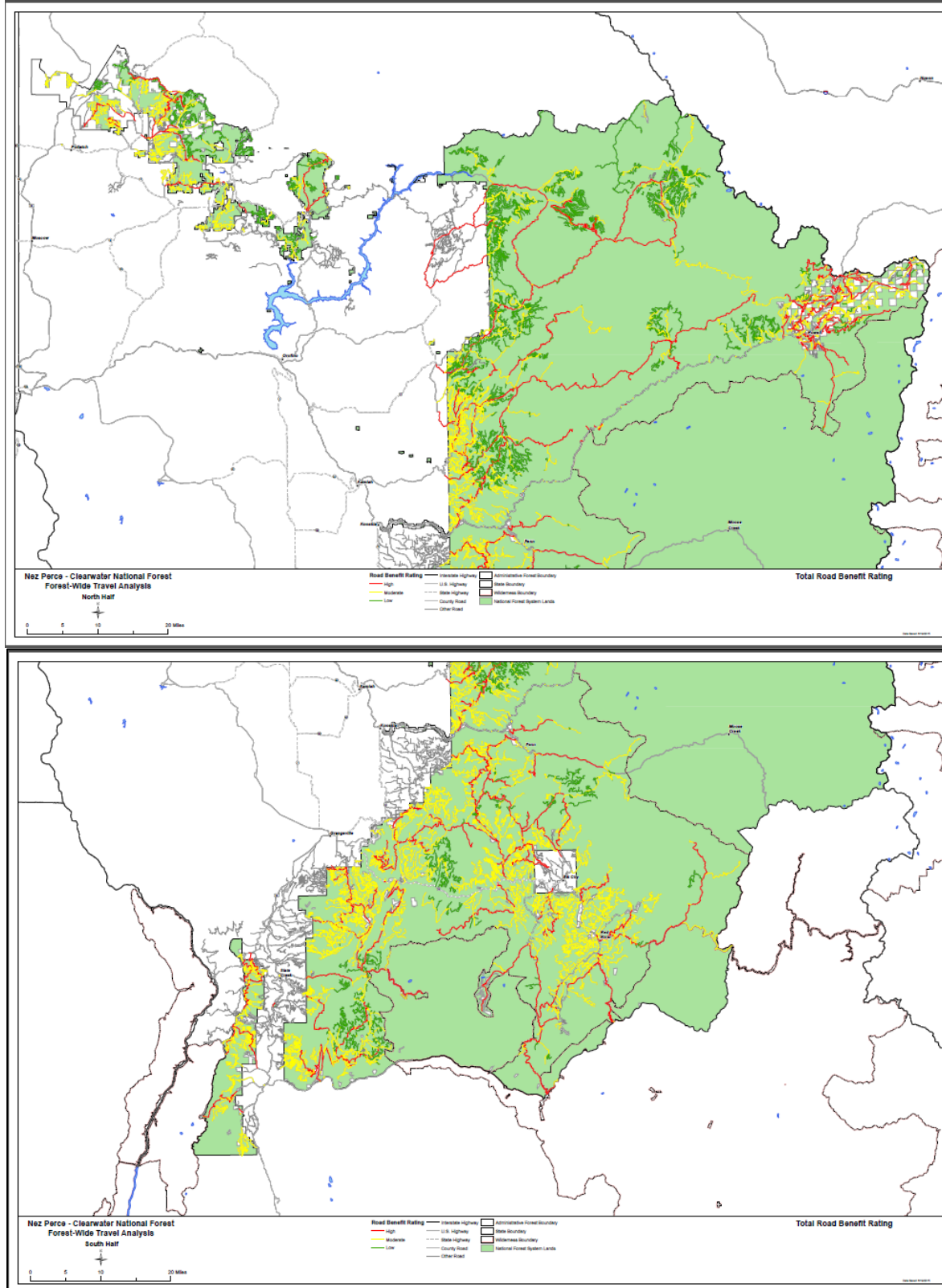


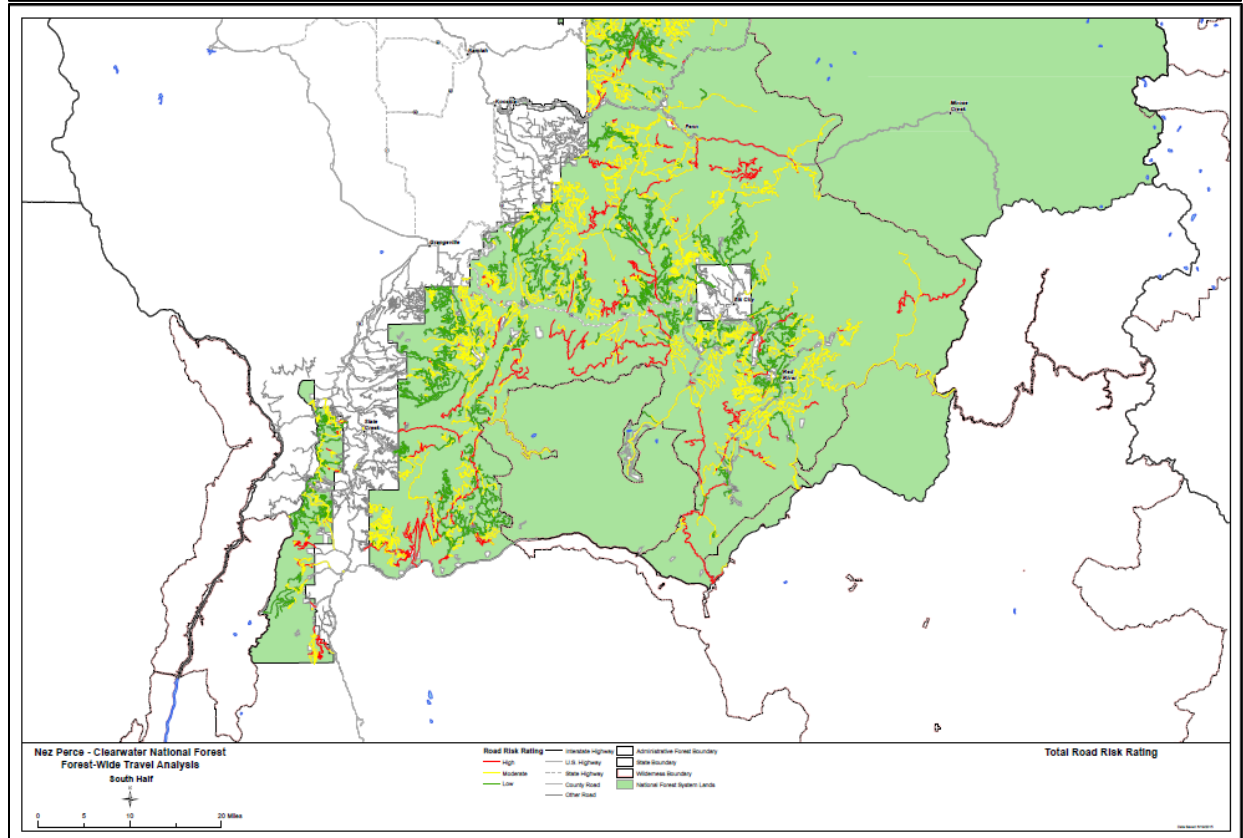
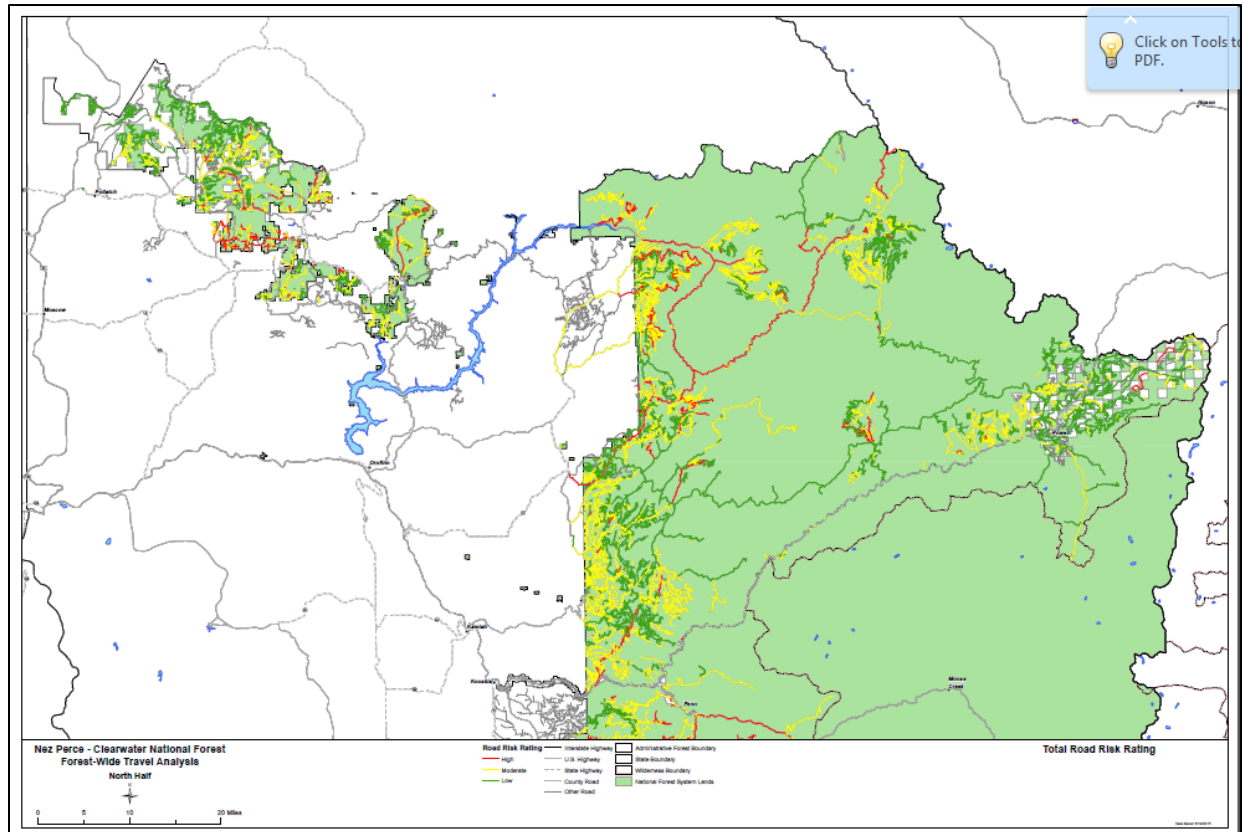






Appendix D - Summary Benefits and Risks

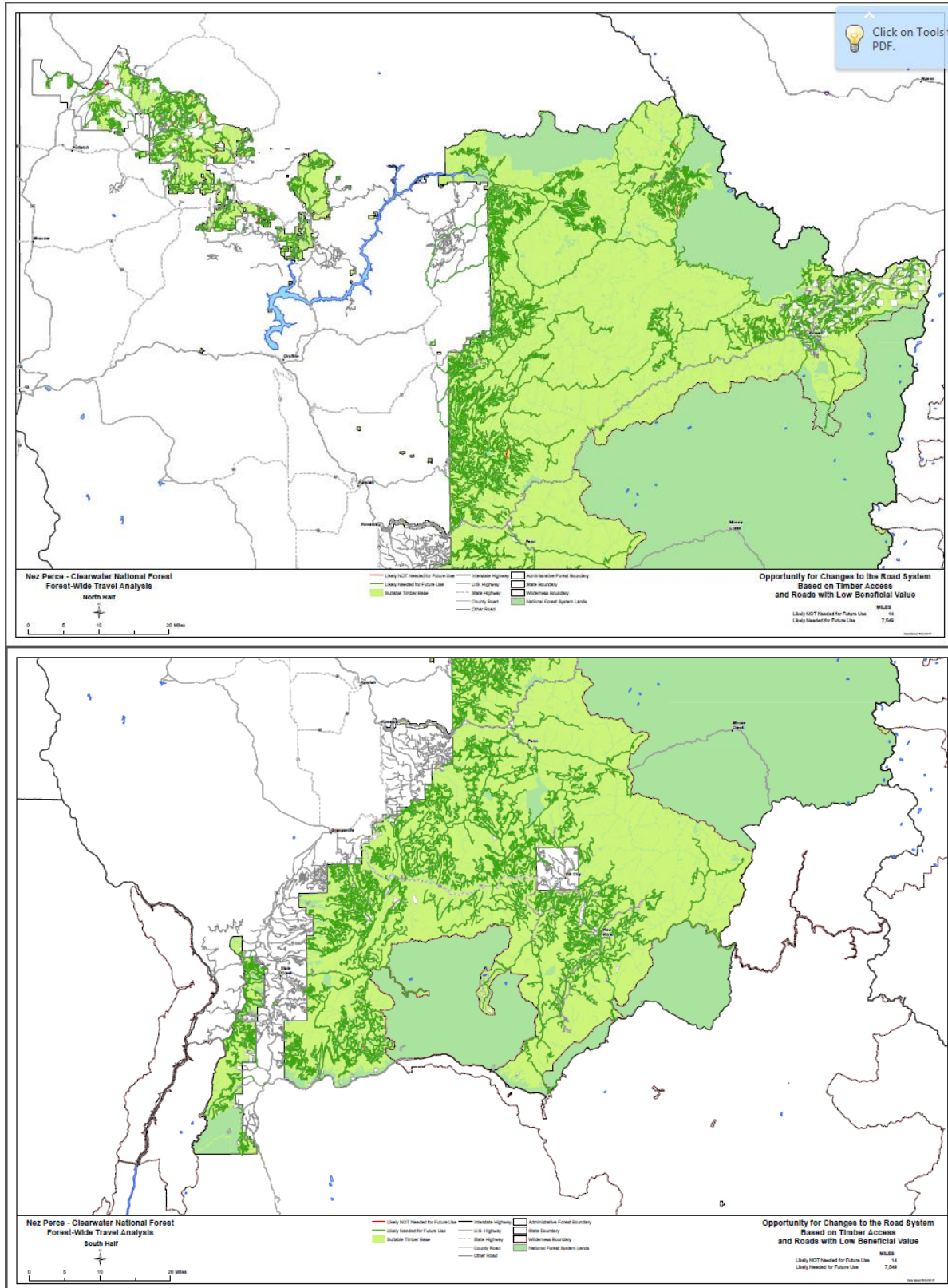




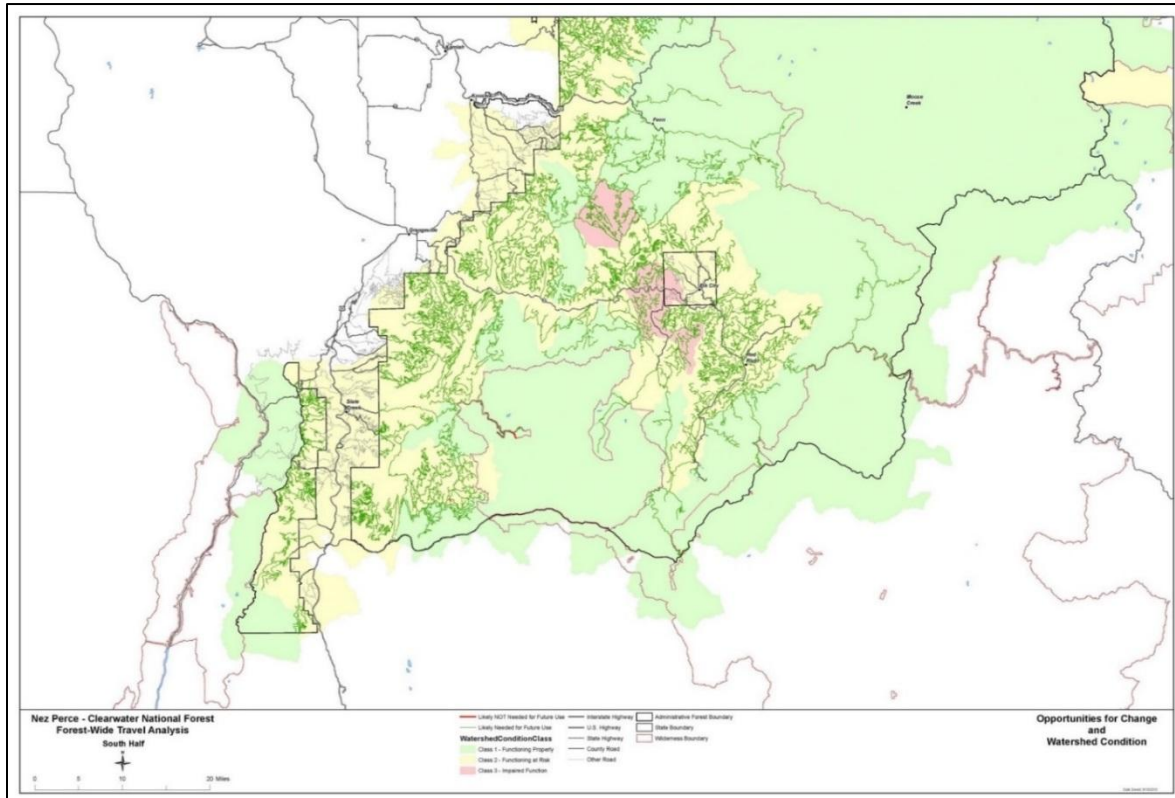
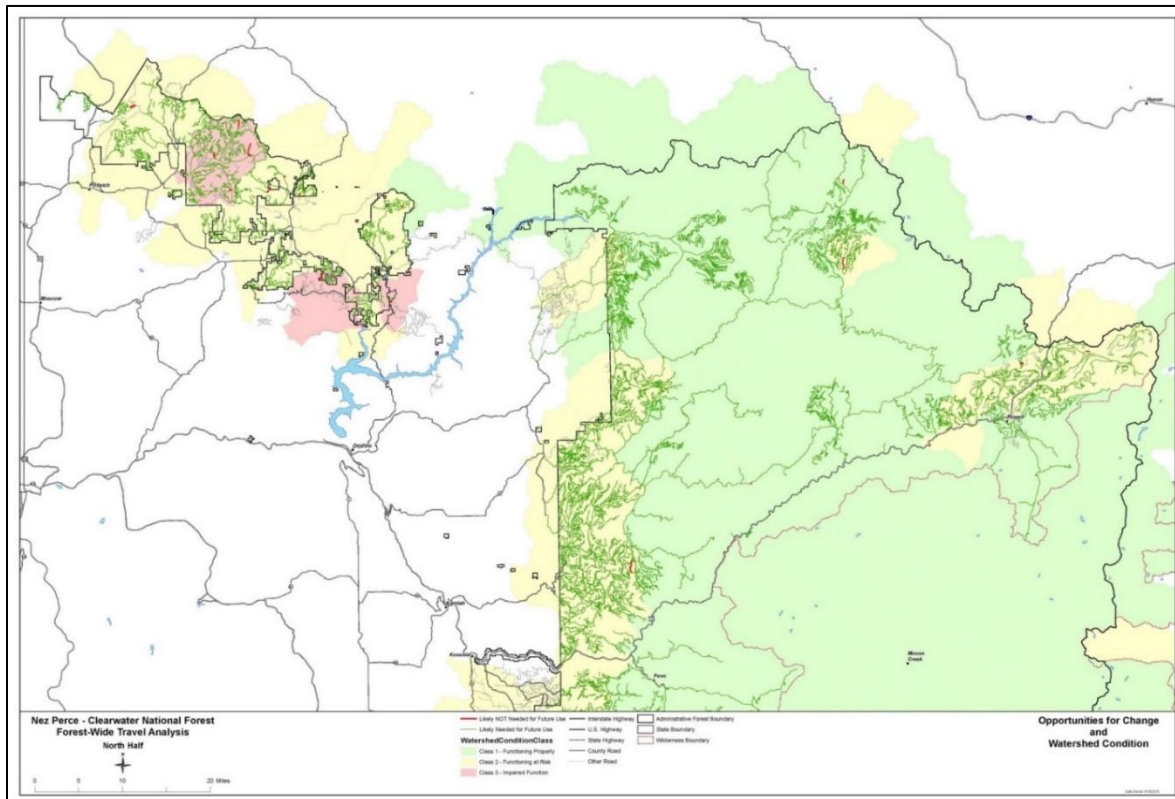
44

Average Annual Regional (RI) Cost for Road Maintenance by Maintenance Level					
Assumptions:					
1 Includes only annual maintenance activities. Deferred maintenance needed to bring the road up to standard is not included.					
2 Drainage is the main consideration for maintenance.					
3 As the maintenance level increases attention to user comfort and safety increases accordingly.					
4 Forest Service Policy set forth in manuals and handbooks is followed.					
5 Guidelines for Road maintenance Levels by SDTDC 2011 used as reference.					
6 Planning and inspection for maintenance is not included.					
7 Major structures such as Bridge and Retaining wall maintenance is not included.					
8 Cost are based on the February 2011 Northern Region Cost Estimating Guide for Road Construction.					
9 Mobilization is included. Equipment will be clean and weed free before it arrives on National Forest System lands.					
10 Maintenance cycle was determined from a Regional average of roads receiving maintenance reported on the Road Accomplishment Reports for FY2008 to 2010. Maintenance cycle for the type of work was also factored in.					
11 Average length of road by ML is a Regional average.					
12 Maintenance activities by maintenance level included in the cost are as follows.					
Describe ion of Work	ML 1: Road is in storage and is in a stable condition. No potential exists for resource damage when vehicular traffic is eliminated. Maintain physical closure device (berm) and drainage and signs. Road Maintenance is done on a 10 year cycle. Average length is 1 miles.	ML 2: High clearance vehicle use. Passenger car traffic, user comfort, and user convenience are not considered; low traffic volume and low speed; drainage structures are dips; surface smoothness is not considered; and very few signs. Outsloped single lane road without a ditch. Brush to maintain access and drainage. Spot blade to maintain drainage. Clean/Repair structures (cattleguard, gate) and signs. Road Maintenance is done on a 5 year cycle.	ML 3: Passenger car use. User comfort and convenience are not considered; single lane with turnouts; low speeds with low to moderate traffic volume; drainage structures include ditch, culverts and dips; and some surface roughness is acceptable. Surface blade to maintain template and drainage. Surface is compact, crowned or sloped to drain without segregation of surface materials; no ruts or rills; suitable material is recovered and incorporated; unsuitable material is removed. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Spot Surface with government furnished aggregate. Road Maintenance is done on a 3 year cycle. Average length is 1 mile.	ML 4: Passenger car use. Provide moderate degree of user comfort and convenience; moderate speeds and traffic volume; drainage structures are culverts; and double lane aggregate surface with dust abatement with a ditch. Brush to maintain sight distance. Surface blade free of washboard, potholes, or other irregularities. Surface is smooth, compact, crowned or sloped to drain without segregation of surface materials; no ruts or rills; suitable material is recovered and incorporated; unsuitable material is removed. Surface remains stable and dust does not become air borne for normal open season (July to October). Shoulders are shaped to provide a smooth transition to traveled way and drain efficiently. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Spot Surface with government furnished aggregate.	ML 5: Passenger car use. Provide high degree of user comfort and convenience; highest traffic volume and speeds; drainage structures are culverts; and double lane paved surface. Brush to maintain access and drainage. Surface Repair include pothole patching, crack sealing, chip sealing and removal of unsuitable material. Shoulders are shaped to provide a smooth transition to traveled way and drain efficiently. Ditches and culverts function efficiently. Clean/Repair structures (cattleguard, gate) and signs. Paint pavement markings. Road Maintenance is done on a 2 year cycle. Average length is 2 miles.
Blading	-	Spot: 500 ft/spot, 4 spots/mile/5 years	4 passes with motor grader (2 passes to clean ditch, 2 passes to level road & final shape)/3 years	8 passes (2 passes to clean ditch, 3 passes to level the road, 3 passes for final shaping)/2 years	Shoulder: 4 passes (2 passes per side); Broom surface of road (4 passes)/2 years
Brushing	-	medium/5 years	medium/3 years	medium/3 years	medium/3 years
Clean/Repair culverts	-	Dip @ 264 ft spacing/5 years	20 culverts @ 264 ft spacing/3 years	20 culverts @ 264 ft spacing/2 years	20 culverts @ 264 ft spacing/2 years
Clean/Repair Structure s	1 per road/10 years	1 per road/7 years	1 per road/7 years	1 per road/7 years	1 per road/7 years
Dust Abatement	-	-	-	5280 gal/mile (14080 sq yd @ 0.375 gal/sq yd)/4 years	-
Edge Liner	-	-	-	-	Edge Liner (10560 ft/mile)/4 years
Patching asphalt and chip seal	-	-	-	-	Patching 0.5%/mile/1 year Chip Seal/12 years
Sign Maintenance	Replace 2 per road/7 years	Replace 3 per road/7 years	Replace 6 per road/7 years	Replace 8 per road/7 years	Replace 8 per road/7 years
Spot Surface s	-	-	20 cy/100 ft/spot 5 spots/mile/6 years	20 cy/100 ft/spot 5 spots/mile/4 years	-
Cost to Maintain Mile	\$700	\$2,000	\$3,500	\$6,500	\$7,000
Annual Cost/Mil	\$70	\$400	\$1,167	\$3,250	\$3,500

Appendix F - Opportunities for Change



Appendix G - Opportunities for Change with Watershed Condition



Appendix H

Development of Risk and Benefit Assessment Questions

Regional and forest subject-matter/category experts were asked to develop questions that are effective at making distinctions between risk and benefits of a forest road system, using available data and tools. The process started with Regional subject-matter/category experts reviewing analysis questions from other sources and developing a shorter list to consider if they could be used as part of this analysis. Previous sources included:

Road Analysis Process (FS-643)

Watershed Condition Framework (FS-977)

Previously completed Travel Analysis Processes by other forests

Travel Analysis Questions developed by Forest Service Region 9.

Then the shorter list of questions was modified to better reflect the environmental risks and road access benefits on the Flathead National Forest through a series of meetings using a blended interdisciplinary team. The subject-matter experts were provided a set of selection criteria that were used as guidance for refining risk and benefit assessment questions. The interdisciplinary team eliminated questions that were duplicative and combined questions that had the same overall intent. Members of the interdisciplinary team and other contributors are listed at the end of this document.

Overarching Selection Criteria:

1. Questions reflect requirements of law, regulation, Forest Service policies or Forest land management plans.
2. Questions use best available data sources.
3. Questions lend themselves to answers that are objective, quantifiable and repeatable (different investigators applying the same question to the same data would come up with the same answers).
4. Questions can be answered based on accepted science.
5. Questions are matched to an appropriate scale of analysis.
6. Questions are effective at making distinctions between necessary and unnecessary roads, making use of previous analysis work.
7. Questions are answered with existing geographic information system (GIS) layers to the maximum extent possible.

Risk Selection Criteria: (Addressed by specific questions)

1. Does the road contribute to an adverse regulatory finding (e.g., Clean Water Act impairment)?
2. Does the road violate Forest Service Manual or Handbook requirements?
3. Does the road violate a Forest Plan standard or guideline?

Benefit Selection Criteria: (Addressed by specific questions)

1. Is the road necessary to meet Forest Plan direction?
2. Is the road necessary to maintain a capital investment?
3. Is the road necessary to access a long-term special use?
4. Is the road necessary to access a reserved or outstanding interest in land or resources?

The risk and benefit questions were used to determine numeric, consolidated assessment values of specific road segments across the forest. The initial risk and benefit assessment values are used in conjunction with the cost analysis, public and partner involvement, and previous commitments (such as road cost-share agreements or long-term special use permits) to identify opportunities to change the Forest road system.

Some of the road-related issues identified by the public and other agencies can be addressed by risk and benefit questions relative to specific road segments, while others would be more appropriately addressed during forest plan revision or during implementation of site-specific projects.

Nez Perce - Clearwater NFs Interdisciplinary Team Members:

Don Curnutt	Team Leader – Forest Engineer
Joyce Thompson	Public Information Specialist
Joel Harrison	Geographic Information

Regional Office Interdisciplinary Participants:

Fred Bower	Team Leader
Will Pedde	Geographic Information Specialist
Brandon Smith	Realty/Special Uses Specialist
Garry Edson	Recreation Specialist
Bruce Sims	Hydrologist
Kristi Swisher	Wildlife Biologist
Steve Shelly	Botanist
James Innes	Timber Management
Shari Miller	Fire/Fuels Management
Brandan Schulze	Public Information Specialist